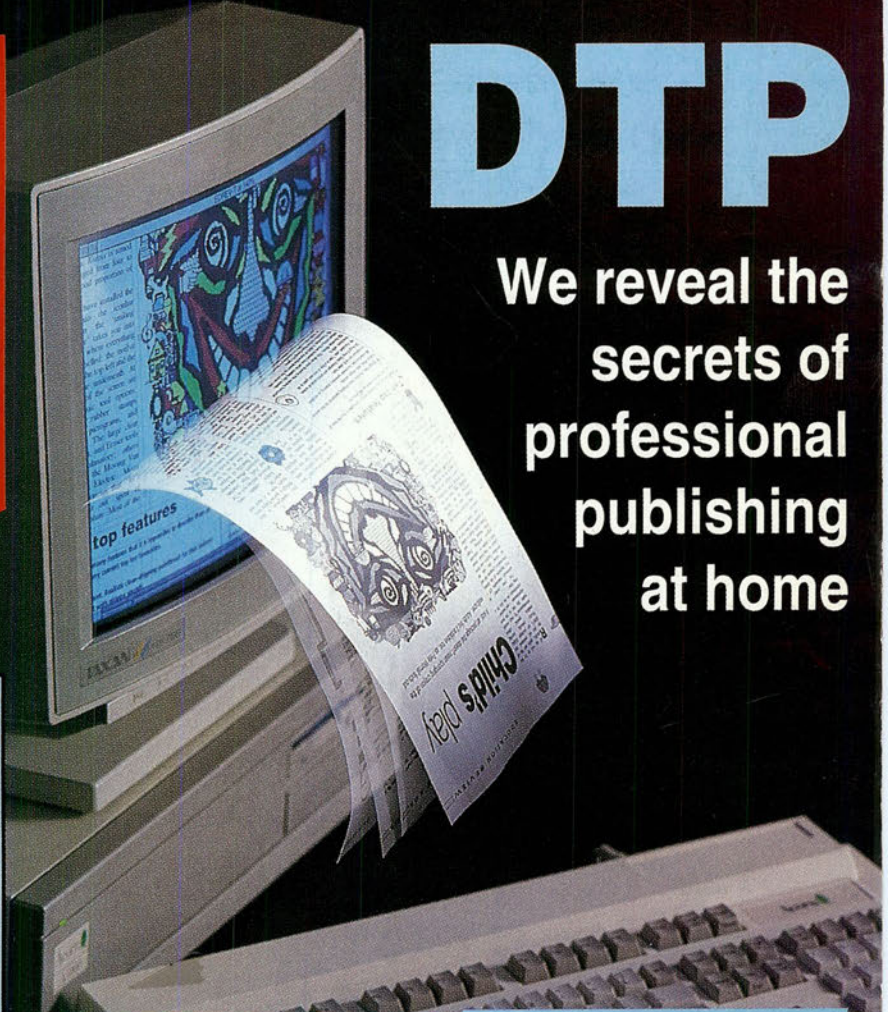
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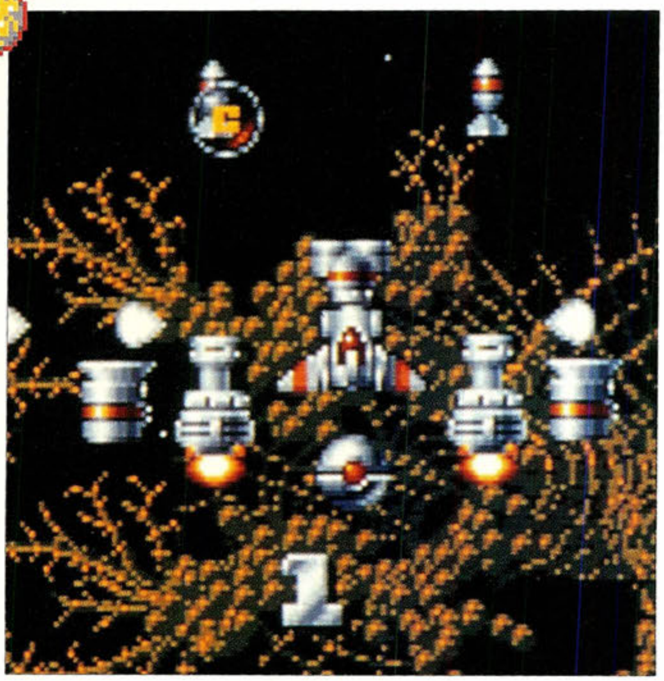
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Production Editor John Rennie
Art Editor Tony Judge
Contributing editors
Ian Burley (News) Sam Greenhill (Games)
Group Advertisement Manager
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Advertisement Manager
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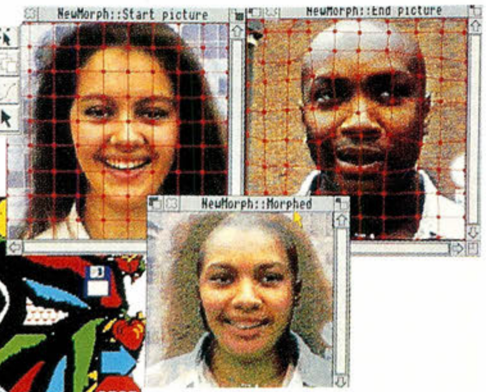
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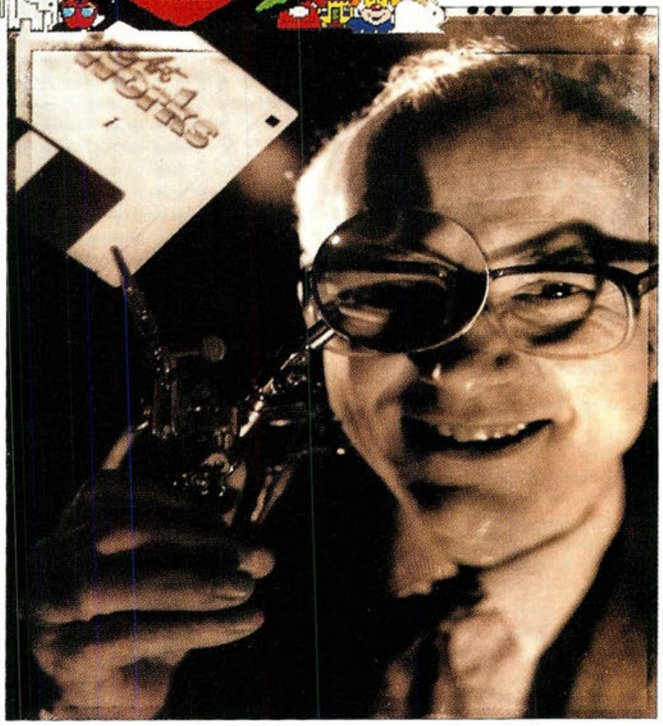
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Editor's letter

As the only newstand magazine to be produced using *Impression, Acorn User* is one of Acorn's success stories. So why are we the only ones? This month we look at some of the options in the publishing world, and describe how the Acorn machine shapes up to the opposition from Macs and PCs. With the release of a brand new version of *Impression*, you could be in for a few surprises. Plus a cover disc for you to enjoy . . .

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ProCAD, KS4	Minerva	£394
Programming in ANSI Standard C on the Archimedes	Sigma	V0 £15
Prophet (requires 2 Mb)	Apricote	£153
Prophet Entry Level	Apricote	£10
ProSHEET	Silicon	£37
Protext	Arnor	£117
Provocator	Computer Tutorial	£15
Puncman 1 and 2	Chalksoft	£16
Puncman 3 and 4	Chalksoft	£16
Puncman 5 to 7	Chalksoft	£18

Punctuate	Xavier	£31
Punctuate!	Topologika	£25
QDBug	Leading Edge	£58
Quest for Gold	Krisalis	£19
QuickKey	ICS	£10
– site licence		£30
Real McCoy 2	Fourth Dim	£23
Real McCoy 3	Fourth Dim	£23
Real McCoy 4	Fourth Dim	£27
Recall, age 8-13	Sherston	£37
Redshift	Minerva	£10
RemoteFS	Atomwide	£48
Render Bender 2	Clares	£78
Repton 3	Superior	£20
Resultz	Colton	£POA
Revelation 1	Longman	£39
Revelation 2	Longman	£75
Revelation 2 CD Rom	Longman	£98
Revelation ImagePro	Longman	£127
Reversals	Chalksoft	£17
Rhapsody 2	Clares	£45
Rhapsody 3	Clares	£79
Rhythm-Bed	Clares	£39
RhythmBox II, age 8+	EMR	£34
RiscBASIC Compiler	Silicon	£79
RiscForth Compiler	Silicon	£79
Risc OS 3 First Steps	Dabs	V0 £POA
Risc OS 3 Programmer's Reference Manual	Acorn	V0 £99
Risc OS Companion Vol 1	Oak	V0 £49
Risc OS Extras 1992	Acorn	£9
Risc OS Style Guide	Acorn	V0 £12
RoboLogo	Silicon	£39
Round the World Yacht Race, age 9+	Storm	£27
Saloon Cars Deluxe	Fourth Dim	£25
– Deluxe Extra Courses	Fourth Dim	£16
S-Base Developer	Longman	**£140**
S-Base Developer Plus	Longman	£275
S-Base Network	Longman	£275
S-Base Personal	Longman	**£75**
Schema	Clares	£95
Schema 2	Clares	£POA
Science, drawfiles	Micro Studio	£25
Score Draw	Clares	£44
Scorewriter PMS Desktop, age 12+	EMR	£147
ScreenPlay	Widgit	£35
ScreenTurtle version 2	Topologika	£54
Search and Rescue, age 9+	Storm	£27
Seashore Guide, drawfiles	Micro Studio	£16
Seelinks – Ourselves, KS1,2	ESM	£27
Seelinks – Pond Watch, KS2	ESM	£35
Seelinks – Tourism, KS3	ESM	£35
Seelinks – Transport, KS2	ESM	£35
Serenade	Clares	£106
Serpents	CIS	£16
Settlement, KS3	ESM	£31
ShapeFX	Data Store	£10
ShareHolder	Silicon	£106
ShareHolder Professional	Silicon	£164
ShowPage	CC	£145
Shylock Gnomes, age 10-15	Selective	£16
Sim City	Krisalis	£22
SkyHunter	Longman	£22
Sleuth	RISC	£POA
smArt	4mation	£50
smArt Aliens, Animals, Dinosaurs, Egypt, Europe*, Faces*, Fantasy, Fashion, Fiddles & Drums, Heraldry, Homes*, Leisure*, Look Smart, Smartoons, Trees and Gardens *Please specify English, French, German, Spanish or Welsh – each	4mation	£15
smArtFiler	4mation	£32
smArt Modern Languages	4mation	£19
Smudge the Spaniel, age 4-8	Storm	£20
Snippet (new version)	4mation	£32
Soapbox	Xavier	£34
SolidCAD	Silicon	£79
SolidsRender	Silicon	£79
SolidTools	Silicon	£234
– education price		£194
SongBook, age 3-10	EMR	£24
Sound Engineer, age 12+	EMR	£59
Sound FX Maker	CIS	£40
Sounds & Rhymes	Xavier	£29
Spark	David Pilling	£5
SparkFS	David Pilling	£20
Sparkle	Morley	£59
Special	ICS	£10
– site licence		£30
Speech!	Superior	**£17**
Spelling week-by-week	Chalksoft	£21
Spex	ExpLAN	£98
Spheres of Chaos	Matt Black	£19
Splash, age 7-11	Sherston	£19
Splice	Ace	£34
Split an Image, age 7-16	Sherston	£16
Spoken Word	Wyddfa	£16
Spooler	Computer Tutorial	£9
Sporting Triangles	CDS	£19

SportsDay	Selective	£22
SportsPeople	Selective	£22
SpriteEd	Computer Tutorial	£17
SpySnatcher	Topologika	£12
Square Route	Computer Eyes	£16
Squirrel	Digital Services	£120
Starspell Plus	Fisher-Marriott	£19
StartWrite	Icon	£55
StockPack	Topologika	£37
StoryBook, age 3-10	EMR	£59
StrongED	Stallion	£22
Studio24Plus Version 2, age 11+	EMR	£149
Studio24Plus Version 3, age 12+	EMR	£210
Stunt Racer	Fourth	£25
SUMthing	Resource	£19
SuperDump	Silicon	£20
Superior Golf	Superior	£14
SuperPlot	Silicon	£20
Supersounds	CIS	£15
Supersounds 2	CIS	£15
Swiv	Krisalis	£19
TABS	ExpLAN	£95
Talisman	Minerva	£8
Talking Pendown	Longman	£58
Talking Pictures	Wyddfa	£16
Target Maths	Triple R	£15
Technodream (Nevryon 2)	Superior	£20
TechWriter	Icon	£159
Thinklink	Xavier	£29
ThinkSheet	Fisher-Marriott	£38
Thundermonk	Minerva	£11
Tiles	Brain Games	£16
Timeshare	Fisher-Marriott	£19
Timetabler	Minerva	£549
Time Traveller, KS2	ESM	£37
– Britain Since the 1930s, KS2		£30
– Expansion, Trade and Industry, KS3		£36
– Making of the United Kingdom, KS3		£39
– Medieval Realms, KS3		£36
– The Victorians, KS2		£30
TinyDraw/TinyPuzzle	Topologika	£34
TinyPuzzle	Topologika	£24
Titler	Clares	£119
Toolkit Plus	Clares	£36
Tools Graphics, drawfiles	Micro Studio	£23
Topographer	Clares	£63
Touch Type	Iota	£39
Tower of Babel	Cygnus	£17
Trace	David Pilling	£5
Tracer	Midnight	£46
Tracker	Leading Edge	£37
Transport, drawfiles	Micro Studio	£25
Turbo Type	CIS	£20
Tween	Ace	£35
Twin	Acorn	£24
Twin World	UBI Soft	£14
TWO (Task and Window Organiser)	ICS	£10
– site licence		£30
TypeStudio	RISC	£39
Utility Disc 1	Data Store	£8
Utility Disc 2	Data Store	£13
Utility Disc 3	Data Store	£7
Utility Collection	Data Store	£21
Vector	4mation	£75
View»Mac 3	Human	£65
– Arc/Mac Cable	Human	£24
Viewpoints, age 7-11	Sherston	£37
Virtual Golf	Fourth Dim	£25
Visual Backup	Dabhand	£39
Vox Box	Clares	£46
Waiter	Digital Services	£35
Waterloo (not OS 3.1)	Turcan	£19
Whale Facts	Topologika	£34
Wordbank	Topologika	£25
Words and Pictures	Chalksoft	£18
WordWorks	CC	£38
Wordz	Colton	£88
World Geography Maps, draw	Micro Studio	£23
WorldMaker, KS3,4	ESM	£57
World Map Study, KS3,4	ESM	£67
Worldscape	Leading Edge	£17
World Wildlife, sprites	Micro Studio	£16
Worra Battle	Oak	£15
WorraCAD	Oak	£79
Yacht 2	Computer Tutorial	£49
Yacht 7	Computer Tutorial	£94
Zarch	Superior	£14
Zelanites (not OS 3)	Micro Power	£15
Zool	Gremlin	£20

STAND 41

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HARDWARE

I²C PRODUCTS . . .

AnDi Oddule	Baildon	£39
I²C Adaptor (needed unless you already have an I²C socket)	Baildon	£10
I²C SWI (enhanced IIC_Control)	Baildon	£15
– bought with Oddule		£5

SCANNERS, DIGITISERS . . .

ArcScanner including Epson GT-4000	Clares	£1660
Colour Converter	Lindis	£145
FaxScan	Spacetech	£94
GreyHawk	Wild Vision	£98
Handipad	TechSoft	£193
Hawk V9 MkII	Wild Vision	
– standard		£199
– hardware dithered		£259
HiVision Digitiser Colour	HCCS	
– A3000 External		£137
– A3000 Series / A4000 Internal		£124
– A5000 / 300 / 400		£124
iMage (Sharp JX-100)	Irlam	
– for A5000		£490
– for other computers		£589
Image Scanner	Iota	£383
– Colour Upgrade Kit	Iota	£239
– Fast Parallel Card	Iota	£98
i-Scan 200	Irlam	£539
i-Scan 400	Irlam	£589
Pineapple Colour Video Digitiser	Pineapple	£195
– A3000 boxed	Pineapple	£230
ProImage (Epson GT6000)	Irlam	
– for A5000		£989
– for other computers		£1089
Scan-Light A4	CC	£277
– with Sheet Feeder	CC	£360
Scan-Light 256	CC	£190
– A3000 internal	CC	£190
Scan-Light Professional	CC	£565
– as above + SCSI interface	CC	£699
Scan-Light Video	CC	£215
SnapShot Colour Video Digitiser	Lingenuity	£195
– A3000 version	Lingenuity	£275
Spectra	RISC	
– A3000 Series / A4000 Internal		£545
– A3000 External		£555
– Archimedes / A5000		£545
Vision Digitiser	HCCS	
– A5000 / 300 / 400 Mono		£48
– A5000 / 300 / 400 Colour		£76
– A3000 External Mono		£60
– A3000 External Colour		£89
– A3000 Series /A4000 Internal Mono		£48
– A3000 Series / A4000 Internal Colour		£76

MEMORY . . .

Fitting extra unless otherwise stated
† Fitting fairly easy ‡ Fitting needs expertise

A3000 2 Mb Upgradable †	Atomwide/IFEL	£43
A3000 4 Mb †	Atomwide/IFEL	£100
A3010 1-2 Mb		£39
A3020 / A4000 2-4 Mb †	IFEL	£55
A310 2 Mb Upgradable soldered ‡	IFEL	£88
– as above + MEMC1a		£113
– as above + MEMC1a + fitting		£143
A310 4 Mb soldered + MEMC1a ‡	IFEL	£152
– as above + fitting		£182
A5000 2-4 Mb †	Atomwide	£85
A5000 2-8 Mb including fitting	Atomwide	£500
A5000 4-8 Mb including fitting	Atomwide	£391
A540 4 Mb †	Acorn	£238

PRINTERS . . .

ArcLaser 300-6	Calligraph	£895
ArcServer 300-8	Calligraph	£985
Bubble Jet BJ-10sx	Canon	£187
Bubble Jet BJ-10sx + TurboDriver	Canon/CC	£219
Bubble Jet BJ-200	Canon	£282
Bubble Jet BJ-230	Canon	£315
Bubble Jet BJ-300	Canon	£325
Bubble Jet BJ-330	Canon	£380

For ordering details please turn to page 3

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Bubble Jet BJC-800 + TurboDriver	*Canon/CC*	£1374
DeskJet 510	*Hewlett-Packard*	£275
DeskJet 500C	*Hewlett-Packard*	£375
DeskJet 550C	*Hewlett-Packard*	£525
Laser Direct HiRes4	*CC*	£899
– 250-sheet Paper Cassette		£99
Laser Direct HiRes8	*CC*	£1275
Laser Direct HiRes Board	*CC*	£325
Refill toner cartridge for Canon EPS		£50
New toner cartridge for Canon LBP-4		£59

COMPUTERS . . .

A3010 1MB FD Family Solution	*Acorn*	£420
A3010 2MB FD Learning Curve with Monitor	*Acorn*	£675
– as above + JP150 Printer		£889
A3020 2MB FD	*Acorn*	£749
A3020 2MB HD60	*Acorn*	£899
A4 2MB FD	*Acorn*	£1395
A4 4MB HD60	*Acorn*	£1695
A4 4MB HD120	*Acorn*	£1799
A4 Extra Battery Pack	*Acorn*	£50
A4 Shoulder Bag	*Acorn*	£35
A4000 2MB HD80	*Acorn*	£945
– as above + Home Office		£995
A5000 2MB HD80 Multiscan	*Acorn*	£1395
– as above + Learning Curve		£1455
Pocket Book	*Acorn*	**£169**

MISCELLANEOUS. . .

386 PC Expansion Card 25 MHz	*Aleph One*	
– 1 Mb		£POA
– 4 Mb		£POA
486 PC Expansion Card	*Aleph One*	
– 1 Mb		£POA
– 4 Mb		£POA
4-slot 4-layer Backplane	*IFEL*	£52
A300/400 Fan kit	*ICS*	£15
A3000 Expansion Box	*Wild Vision*	£135
A310 RISC OS Carrier Board ‡	*IFEL*	£18
A5000 Fitting Kit for second hard disc	*ICS*	£15
Arckey Function KeyStrip Holder	*ICS*	V0 £3
– pack of 4		V0 £10
ArcNET	*ACS*	£69
ARM3 ‡	*Aleph One/IFEL*	£165
Arm_Stick	*Arm_Tech*	£28
ColourBurst	*State*	£374
ColourCard	*CC*	£225
– A3000 External	*CC*	£225
Dongle Dangle with screw fittings	*ICS*	£6
Fan filters (pack of 10) (not A5000)	*ICS*	£6
FaxPack	*CC*	£289
Floating Point Accelerator (for A5000 + A540)	*Acorn*	£91
Floppy Discs, 10 × 3½" High Density		£10
G16 True Colour Card	*State*	£258
G8 Plus Accelerator	*State*	£238
HiPoint Mouse for A4	*Genius*	£49
Microlin fx Pocket Fax Modem	*Pace*	£179
Micro Mouse	*Clares*	£26
Monitor Stand for A3000	*ICS*	£21
Mono/SCSI	*Atomwide*	£48
Podule Case for A3000	*HCCS*	£16
Printer Port Sampler	*Leading Edge*	£42
Printer/SCSI	*Atomwide*	£74
Publishing Pack	*CC*	£475
RISC OS 3 Upgrade	*Acorn*	£42
– Bulk package	*Acorn*	£335
– A5000	*Acorn*	£20
Seal 'n Type spill-proof Keyboard Covers		
– Archimedes / A5000	*Kador*	£14
– A3000	*Kador*	£14
TouchWindow	*Lindis*	£234
Whisper Fan Quietener (for A300/A400 series only)	*ICS*	£15
Wizzo IDE Filing System on rom	*ICS*	
– Wizzo4 for A4		£POA
– **Wizzo5** for A5000		**£29**

"You wonder how you ever managed without QuicKey."
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"TWO is the best thing I've ever bought."
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As well as letting you type all those extra characters, Special is the easiest way to examine new fonts.

"DrawBender is quite stunning."
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Padlock is our top seller for simple disc security.

"Fontasy offers a wider range of effects than FontFX. It is a package for the perfectionist, whether professional or enthusiast."
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HOW TO ORDER

VAT: Zero-rated items are marked V0. UK customers please add 17.5% to all other prices. EC customers outside the UK (including BFPO) please do the same unless you are VAT registered, in which case quote your international VAT number. Ours is GB 595 7258 84.

CARRIAGE IS FREE WITHIN MAINLAND UK IF YOU PAY ON ORDERING.

Overseas carriage: If you are paying by credit card we will add airmail and insurance at cost. Otherwise please add £6 (Europe) or at least £12 (elsewhere) for each software item and send a pounds sterling bank draft payable at a London clearing bank, or Eurocheques for not more than £100 each.

Credit cards are welcome. We do not charge your account until your order is fulfilled. Your name and address must be as known to the credit card company. If you are leaving an order on our answering machine please include your telephone number, the expiry date of your card, and your calculation of the total payment due. We will make no charge for credit card commission unless we have informed you first.

Official orders are welcome from UK government and educational institutions. Payment is due in 14 days. Invoices are subject to carriage and late payment charges.

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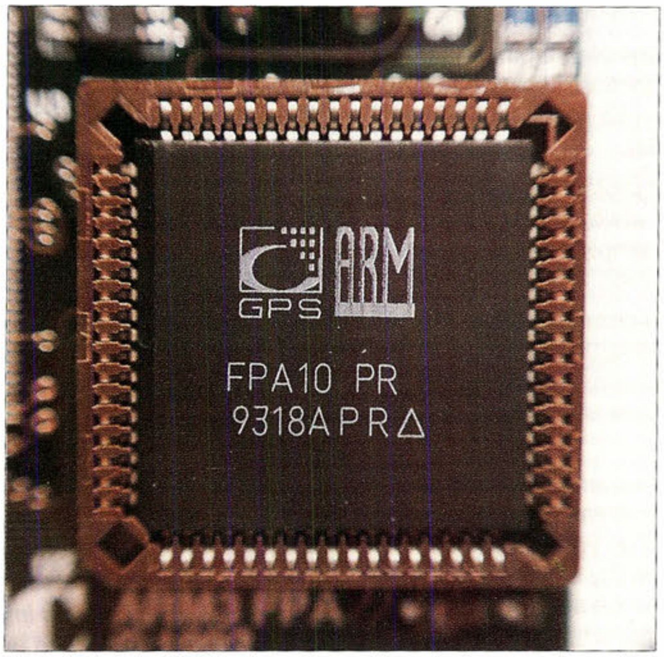
PRICE CUTS FOR THE ARM3

THE arrival of the FPA10 chip has led to price cuts by Arm3 upgrade specialists.

A year ago the average price of was £200 but Aleph One is now selling its Arm3 upgrade at just £129. Watford Electronics recently cut its price to £146.88 plus postage.

There has never been a better time to buy, but what if you want FPA10 compatibility? Simtec has announced its 25MHz Arm3 with FPA socket is now available with an FPA10 for £199 + VAT. This makes the Arm3 portion just £100 + VAT as the FPA10 chip is listed at £99 + VAT. The board without FPA costs £139 + VAT, down from £165 + VAT.

CJE Micros has announced its Arm3 with FPA10 will be £199 + VAT. CJE's solution adds a small, £5 daughterboard containing the FPA chip to its original Arm3 board. The daughterboard and FPA chip are available from CJE for £99 + VAT. CJE is offering a service to transfer socketed PGA-type Arm3s from older non-FPA-compatible Arm3 upgrades, of most makes, to its FPA-compatible board. CJE's Arm3 on its own has been cut to £135 + VAT from £149.



The arrival of the FPA10 has brought new life to the Arm upgrade market

Ifel is likely to sell its single board Arm3 plus FPA for around £200 + VAT. Prices for the Arm3 board without FPA will be cut too. Ifel will ship its 35MHz Arm3 for £139 + VAT.

But what of Aleph One's hinted-at Arm600 upgrade? Alex van Someren told us he's not sure there will be enough demand for the FPA10 chip to warrant immediate development of his combined Arm600/FPA upgrade idea since there are also major problems to get Risc OS working on an Arm 600.

CJE Micros: (0903) 213361, Simtec: (0772) 812863e, Ifel: (0752) 840029, Aleph One: (0223) 811 679, Watford Electronics (0582) 487777.

SOFTWARE UPDATES

RISC Developments has improved three software packages; *Desktop Thesaurus*, *Hearsay II* and *Ovation*.

Thesaurus now has nearly 182,000 synonyms and 17,250 keywords. Colton Software has devised a software link so *Wordz* can exploit *Desktop Thesaurus* facilities; other word processors will follow.

Comms package *Hearsay II* has a 3D-style user interface and revised menus which incorporate function and hot-key prompts. There is support for external serial device drivers for hardware like The Serial Port's high-speed dual serial card.

Ovation 1.39 incorporates support for *ArtWorks* drawing files, though the user must have a copy of the *AWViewer* application. Upgrades are available in exchange for the original discs plus SAE or £2.

● Risc Developments has priced the *Sleuth* Optical Character Recognition package at £49 + VAT with £7.35 off for education customers; the package should be on sale now.

Risc Developments is on (0727) 840303.

SIMTEC PRICE CUT

SIMTEC has redesigned its A3000 Ram upgrade card because of difficulty in sourcing chips. This means 4Mb A3000s are now cheaper. A single card can progressively upgrade an A3000 from 1Mb



to 2Mb then 4Mb; the original A3000 1Mb Ram is retained.

The Simtec 1Mb board costs £47 + VAT and the four extra chips (2Mb) to upgrade to 4Mb are available for £60 + VAT as long as stocks last. The fully upgraded card costs £99 + VAT.

NEWTON MESSAGEPAD ON SALE

THE Apple Newton is now on sale in the US, starting at $499. Unlike Amstrad's cheaper PDA pen-based organiser, the Newton uses the much more powerful 20MHz Arm610 (a derivative of the Risc processor used in the Archimedes).

Called the Newton MessagePad, the first of the Newton family is a sophisticated personal organiser, slightly larger than an Acorn PocketBook and with a large touch sensitive screen but no keyboard. All commands are either actioned by pressing icons or written using a plastic stylus.

It understands joined-up writing and individually-written characters. Drawn geometric shapes are also recognised. Built-in functions include a diary, scheduler, and to-do list.

Hundreds of third-party companies have signed up to produce Newton software, most of which will probably be supplied on PCMCIA credit card-sized cartridges.

The MessagePad is completely solid state – there is no hard drive. Infrared transceivers are an option which allows inter-MessagePad 'beaming' or data transfer.

Apple is due to launch the Newton in the UK any time now, with Sharp also expected to ship its own version at the same time. Predictions are that the UK price of the Newton will be around the £600 mark.



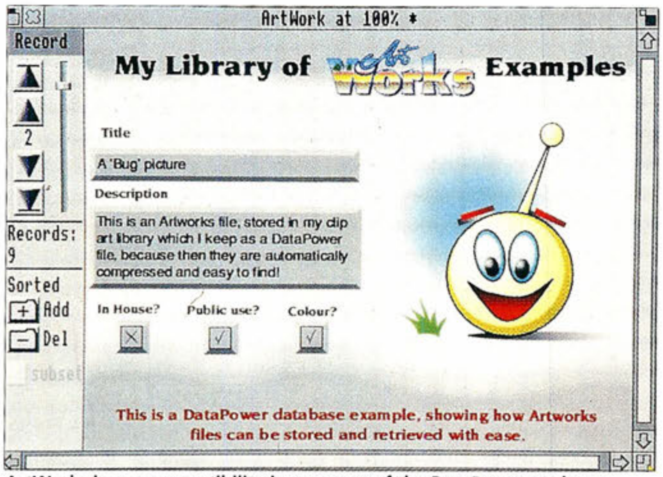
IOTA REVISES DATAPOWER

IOTA Software has added *ArtWorks* image compatibility to its *DataPower* database package. A client/server version of the database has also been completed.

DataPower has proved popular for graphics work so *ArtWorks* compatibility was an obvious development. The package uses on-the-fly data compression, so bulky graphical image data can be stored economically.

All sorts of fields can be attached to images for subsequent searches. Extensive implementation of Risc OS drag-and-drop actions makes it easy to import and export image files using a mouse. *ArtWorks* images can now also be used as part of database reporting documents.

The new network client/server version of *DataPower* means users can have multiple read/write access to a single database. For example, a whole class of students can add records to the same database at the same time. Special record-locking allows someone to search and build reports even if someone else is adding more records at the same time.



ArtWorks image compatibility is now part of the DataPower package

Iota's Adrian Critchlow commented on the record-locking: 'It's really impressive if you are looking at a multi-record view and at the same time various people on the same network are all adding records to your database, because your screen updates automatically and all the records are already sorted into order.'

Password protection is provided so, for example, teachers can update school record files from anywhere on the network.

Iota won't be charging registered customers for the luxury of upgrading to the client/server version of *DataPower*.

Iota can be contacted on (0223) 421542.

DATABASE FOR LABEL

DIGITAL Phenomena has released a program for label printing. Each record can use ten easy-to-define fields, card index fashion. There is a text search option and records can be sorted according to criteria applied to any of the ten fields. Products of searches and sorts can be exported to create new databases. Each record can be printed as a label using all the traditional Risc OS attributes of variable print size, fonts and formats. LabelBase costs £49.95 (£199.95 site licence).

Digital Phenomena are on (0705) 871530.



Records can use up to ten fields

SPLAT MATS

MOUSE mat a tad dull? You could go to the opposite extreme and get a Splat Mat. These psychedelic mouse mats cost £4.95

Interface is on (0257) 425839.



NETWORKED IMPRESSION

COMPUTER Concepts has made its networked *Impression* and *ArtWorks* compatible with new Ethernet hardware, which has recently appeared on the market from I^3, Beebug and Digital Services. Network site-licence versions of *Impression* and *ArtWorks* are available for £660; upgrades are free to registered users.

CC CREATES NEW IMPRESSIONS

TWO new versions of *Impression* will be among the attractions on the Computer Concepts' stand at the Acorn World show.

There will also be a version of *ArtWorks* on CD-Rom, the long-awaited thesaurus, and a digital audio processor and editor called *AudioWorks*.

Impression Style and *Publisher* are to be the latest updated version of CC's *Impression* DTP/word processing family.

Computer Concepts prefers to limit its description of *Style* to that of a word processor, and says that its development was directly influenced by work on the *Advance* word processor for Acorn, as well as feedback from many of the 30,000+ existing users of *Impression* in its various forms.

Documents can be larger than available memory, there is a Tiff image loader, and 15- and 24-bits per pixel colour is supported for those with the necessary video hardware.

The Computer Concepts thesaurus, which is based on the Collins/Gem Dictionary, will be included. A different version of the thesaurus will be sold on its own.

Style replaces *Impression Junior* and upgrades are available to registered users. *Style* will cost £99 + VAT.

Publisher is a re-worked version of *Impression* senior. It features all the key improvements found in *Style* as well as DTP enhancements like 24-bit RGB or 32-bit CMYK full colour separations, page bleed control, crop marks and a special OPI (Object Pre-press Interface) supplement for PostScript output, which references external image object files.

We can also expect a new single file document format, drag-and-drop editing, revised ruler control, paragraph styles and selection, crop marks and many more features too numerous to mention in the space available.

The *ArtWorks* CD-Rom contains around 200Mb of clip art and fonts as well as the application itself. 95% of the 'serious' entries to CC's recent clip art competition will be on the CD.

A second *ArtWorks* CD will act as a demonstration disc featuring all the clip art but just the *ArtWorks* viewer instead of the full application.

New hardware products will also be featured by Computer Concepts. A new four-colour 360dpi inkjet printer is promised at a very competitive price, complete with Turbo-Driver support.

Secondly, and in conjunction with Wild Vision, what's described as the 'ultimate' multimedia product for Acorn machines will be unveiled.

You can also expect a true 24-bit colour version of the Colour Card graphics accelerator board.

Computer Concepts is on (0442) 63933; Wild Vision can be contacted on 091-519 1929.

STALLION'S AUTUMN ALMANAC

STALLION Software has produced an updated version of *Almanac*, its desktop business and personal organiser package.

Almanac 2 features 3D dialogue boxes and improved icons; there are new data import/export options, notes are extendable and the address database is now compatible with *FaxPack*.

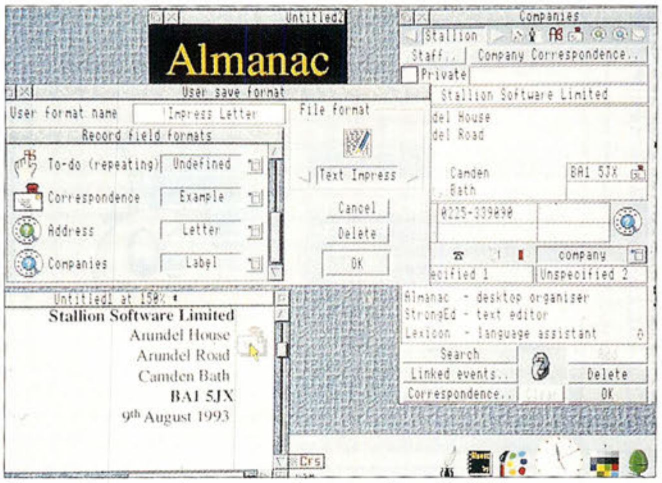
Almanac 2 will be at the old price of £72.50 until the Acorn World show and existing *Almanac* users can upgrade for free by returning their original discs to Stallion.

Also from Stallion this month comes version 2 of the *Lexicon* language learning aid which now incorporates the same 3D-look as *Almanac 2* plus it includes 'Cloze' word-elimination testing.

Russian. German and French versions of *Lexicon* are available at £70.50 and there is a 20 per cent discount for education customers. Finally, a help utility using *StrongHLP* has been produced for programmers who use Arm assembler.

The standalone program is called *Assembler Help* and includes easily-accessible information on Arm processor and floating point instructions plus assembler directives, variables, macros, and so on. *Assembler Help* costs £15 + VAT.

Stallion Software, is on (0225) 339090.



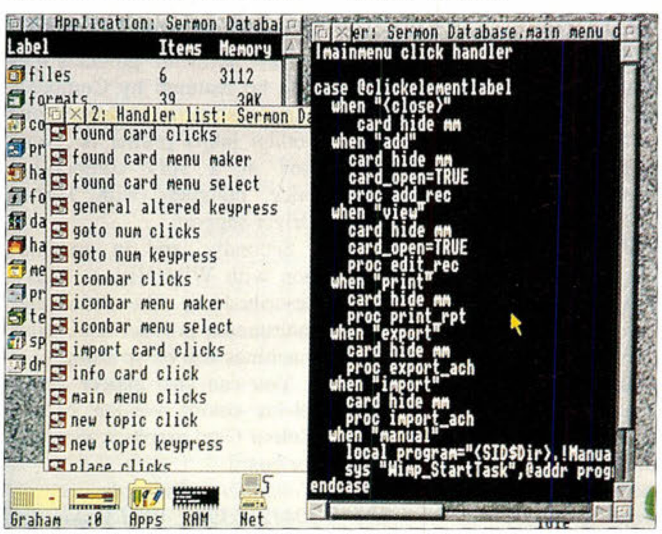
Almanac is now out in a new version, complete with 3D icons

S-BASE NETWORK

LONGMAN Logotron has announced the release of *SBase Developer Plus.* This new package brings SBase to networking. It allows the user to develop S-Base database systems to be run across a network.

To access the networked versions, users can buy the cheaper *SNet* application. This is the only package that can access *S-Base Developer Plus* applications across a network – the original *SBase* is not sufficient. *SNet* is sold as a separate package. *SBase Developer Plus* is priced at £299 single user, or £800 for an education site licence. *S-Net* server costs £299 for an education site licence. An upgrade from *S-Base Developer* to *SBase Developer Plus* costs £100, the price differential between the two packages.

Longman Logotron is on (0223) 425558.



Now SBase developers can opt for a network environment

NEW FOR HOW OLD?

A BIRMINGHAM Acorn dealer got a bit of shock when a local school applied to take advantage of the Acorn Xchange scheme, which encourages schools to turf out redundant computers in part exchange for nice new Acorns.



Daco Software was confronted by a 30-year old Honeywell minicomputer.

The antique was presented to Daco by Bromsgrove Lower School, which, in return, ordered an A5000 and a couple of A3020s.

Acorn is on (0223) 254254

In brief

Chip price hike

The recent explosion at a Japanese plastics factory has thrown prices in the computer memory chip industry into disarray.

The factory supplied chip-packaging plastic resin for around 60 per cent of the world's memory chips supply. Panic has doubled prices in just a few weeks. It's difficult to tell how long the price panic will last or how badly the Acorn memory upgrade market or even Acorn's manufacturing itself will be affected.

ScanLight for A3000/4000

ScanLight Video, the new combined video digitiser and scanner interface launched last month is now available for the A3000/4000 range.

CC points out that users of these Acorn machines are probably more likely to appreciate the saving of an expansion slot than most. As with the full-size podule version, the mini-podule ScanLight Video costs £220 + VAT.

Live'93

Acorn is to exhibit at a major consumer electronics show in London between 16-20 September.

The show, Live'93, will take place at Olympia in London and is sponsored by News International newspapers *The Times*, *Today* and *The Sun*.

Exhibits will cover hi-fi, video, telecommunications and of course computing, with the accent on multimedia. Tickets cost £7 each with discounts for families. The ticket hotline is 071-373 8141.

Acorn C User Group

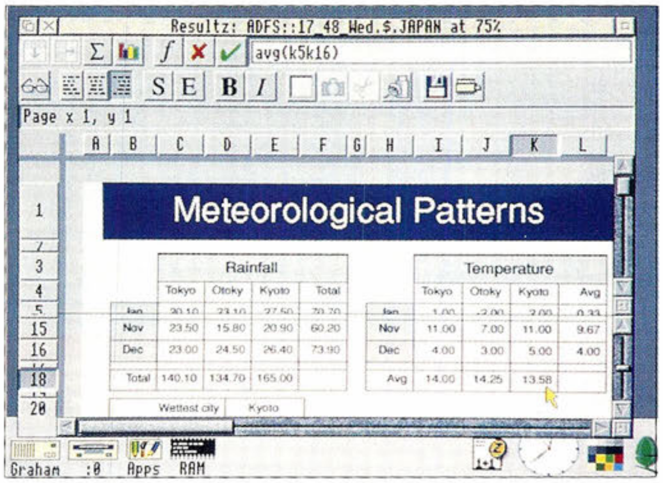
The C User Group UK has decided to open a new sub-group to concentrate on C-programmers within the Acorn world. The group will have its own bi-monthly magazine called *CAUGers* (C Acorn User Group).

Featured in the magazine will be programming hints and tips, tutorials and reviews. To join the CAUG you need to join the main CUGUK, which costs £12 a year and add £5 for the Acorn specific sub-group. More details are available by writing to Francis Glassborow at 64 Southfields Road, Oxford, OX4 1PA.

COLTON SETS OFF FIREWORKZ

COLTON Software has released early details of its latest offering, *Fireworkz*. This will be a combination of the *Resultz* spreadsheet and *Wordz* word processor and brings Colton full circle to its original combined spreadsheet and word processor, *Pipedream*.

Fireworkz is an apparent improvement, in that it doesn't suffer from any of the compromises and limitations of the *Pipedream* user interface. *Resultz* and *Wordz* as separate applications have a degree of data communication between them, but you can't edit a *Resultz* sheet within a *Wordz* document using *Wordz*, or vice versa.



Fireworkz brings you Resultz and Wordz in one package

Effectively, *Fireworkz* will enable this. Colton will release further details soon, and hopes to have *Fireworkz* ready for the Acorn World show. Also at the show will be *Recordz*, the new database application, and the next stage in the Colton 'Z' family.

Colton Software is on (0223) 311881.

DESKTOP OFFICE

MINERVA Software has incorporated an Acorn PocketBook/Psion Series 3 database facility into its *Desktop Office* integrated software.



This enables database files to be entered and updated on an Archimedes using the *Desktop Office* database module and exported to the PocketBook/Series 3, or vice versa, through the Acorn A-Link serial port.

Anyone who has attempted to enter a substantial amount of data into a PocketBook will know how difficult the tiny keyboard makes this. By being able to make use of the full-size keyboard of your desktop machine the task is no longer the fiddly chore of old.

DeskTop Office will cost you £79.95 + VAT and existing users of the software can upgrade for £10 + *VAT*.

RISC OS 3.1 UPGRADE OFFER EXTENDED

IF you haven't upgraded to Risc OS 3.1 and thought you had missed the introductory offer which expired recently, relax – Acorn has extended it until the end of October.

Acorn's product manager, Neil Gardner, commented: 'When we introduced the upgrade last September we offered it at a very attractive price. However, as some of our customers were not aware this was only for a limited period, we are extending the offer for another three months.'

An even cheaper upgrade for A5000 owners with no new manuals has been discontinued. Gardner commented: 'The upgrade for existing A5000 owners to move from OS 3.0 to 3.1 has resulted in the offer being taken up by the majority of this potential market, so we feel the time is right to withdraw this part of the special offer.'

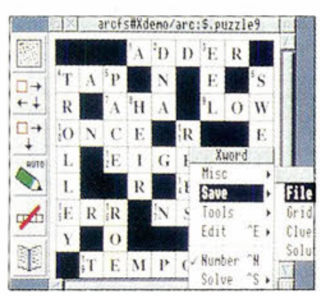
Sticking with Risc OS 2 could be a false economy as more software appears needing OS 3+. The OS 3.1 upgrade kit remains at £49 until the end of October when it reverts to £89.

PANDA CROSSWORDS

THE Risc OS crossword generator and publisher, *Xword*, is now available from Panda Discs in Staffordshire.

Any size puzzles can be generated, grids are automatically produced, text files can be dragged and dropped onto the puzzle for automatic placing, a dictionary is included and puzzles can be output as *Draw* files. Foreign language dictionaries are also on the way.

Panda Discs points out that *Xword* can be used not only to create crosswords, but to solve



existing ones too. So no more struggling over that final clue. Xword is priced £44.95.

For more details ring (0902) 850605

In brief

Open day

Acorn dealer Selective Computer Services is to hold an open day at the Kegworth Hotel on 21 November. The venue can be found at Kegworth village, Derbyshire, near junction 24 of the M1. Selective is an Acorn-approved CD-Rom supplier. For more information call (0332) 690691.

Lynsoft moves

Lynsoft, best known for the *Survivor* adventure game, has moved to 32 Irvin Avenue, Saltburn-by-Sea, Cleveland TS12 1QH. Lynsoft's telephone number, (0287) 624843, remains unchanged.

AKF18 problems

Some batches of Acorn AKF18 multi-sync monitors have been prone to premature component failure. Acorn is addressing this by fixing the problem free, even outside the standard 12-month warranty period in some cases. If you have a faulty AKF18 older than 12 months it is worth seeing whether it is eligible for free repair via your Acorn service centre.

Acorn address

Acorn moved to its new HQ, Acorn House, at Vision Park, north of Cambridge on 18 August. The address is Acorn Computers, Acorn House, Vision Park. Histon, Cambridge, CB4 4AE. Phone: (0223) 254254, Fax: (0223) 254262.

Arm600 not dead

The Arm600 processor might not be off Acorn's product agenda after all.

Despite the emphasis on the Arm700, Malcolm Bird, Acorn's technical director, has told *Acorn User* that now Arm Ltd has reduced the cost of the device compared to the Arm700, it has become attractive again, perhaps for lower cost models in the next generation of machines.

Acorn afloat

Cowes software company, Computer Tutorial Services (CTS) used an A5000 and A4 at a recent Cowes regatta. CTS produced detailed race results as well as storing cumulative points to eventually identify winning yachts.

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The Archimedes Specialists

BEEBUG

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Wherever possible, all orders received by 1pm will be dispatched the same day. All new items are supplied with at least 12 months warranty.

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We have staff dedicated to providing technical help and advice to customers, which means continued support before AND after your purchase from us.

Stock

Only part of our wide range of products for Acorn are shown here. Please telephone for anything that you need, but cannot see listed.

Prices

You will find our prices VERY competitive. If you find the same item cheaper elsewhere, tell us and we will try to do better. Prices are subject to change without notification.

Showroom

Beebug is a large reliable company, not a faceless boxshifter, so please feel welcome to visit our large, well-equipped showroom in St. Albans to try the latest products. Showroom hours are Monday to Saturday 9am to 6pm.

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Simply phone our Tele-sales staff for credit card or Switch orders. Call 0727 840303. After 5pm an answerphone will record your orders.Written or official orders are welcome. Our FAX number is 0727 860263. Our order processing and stock system is fully computerised and networked for efficiency.We can tell you what is in stock, or when deliveries are expected and provide full information on your order and despatch details, at the press of a button. Once you have dealt with Beebug we will allocate you a customer number, making future orders even simpler.

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Carriage charges are shown by the letter after the stock code. When ordering several items use the highest carriage code, plus half of each subsequent code (subject to a UK maximum of £13). Codes a - £0.85, b - £1.70, c - £2.70, d - £3.20, e - £5.50, g - £8.00 (courier). Air mail will be charged at cost for overseas customers.

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Please add carriage and then VAT at 17.5% to your order. This also applies to E.C. (unless you quote your VAT number), and some BFPO customers. Zero VAT items are marked with *.

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Fax 0727 860263

ACCESSORIES

0772c	4 Way Surge Strip	Bowthorpe	18.90
5852c	A4 Battery Pack	Acorn	50.00
5854b	A4 Shoulder Bag	Acorn	35.00
0723c	Delta Cat Joystick	Voltmace	24.74
5493b	Joymaster	Leading Ed	24.00
0726b	Joystick Controller	Leading Ed	34.00
0789a	Mouse Mat - Blue	BEEBUG	3.36
0788a	Mouse Mat - Red	BEEBUG	3.36
0714b	Mouse Splitter	Voltmace	16.48
0440c	Printer Stand Adjustable	BEEBUG	8.47
4084c	SuperCharger Joystick	Quickjoy	9.50
0762c	Trackerball - Archimedes	GEC	39.00

BOOKS/MANUALS

5478b	!Help	Sherston	7.95*
5479b	!Help - Draw	Sherston	15.95*
5481b	!Help 3	Sherston	9.95*
1207c	30 Hour BASIC	BBC/NEC	15.95*
1265c	A3010/3020 Tech Ref Man.	Acorn	29.95*
5856b	A4 Portable Handbook	Acorn	7.50*
5857c	A4 Technical Ref Manual	Acorn	65.00*
5855b	A4 Welcome Guide	Acorn	10.00*
1252c	A5000 Tech Ref Manual	Acorn	65.00*
1238c	Acorn Educ Directory	Acorn	4.95*
1203b	ANSI C Rel 4 User Guide	Acorn	25.00*
0915a	Arch Ass Lang Prog Disc	Dabs P	7.21
1211b	Arch Assembly Language	Dabs P	14.95*
1262b	Arch Game Makers Manual	Sigma	14.95*
1243b	Arch Oper. Syst (Book)	Dabs P	14.95*
1246b	Archimedes First Steps	Dabs P	9.95*
1228b	Assembler 2 User Guide	Acorn	25.00*
1208b	Basic V: Dabs Guide	Dabs P	9.95*
1222b	Basic Wimp Prog on Acorn	Dabs P	16.95*
1244c	BBC Basic VI Guide - Arc	Acorn	19.95*
1261b	Budget DTP on the Arch	Dabs P	12.95*
1212c	C: A Dabs Guide 3rd Ed.	Dabs P	16.95*
1247b	Control on the Arch HCCS	HCCS	9.95*
1237b	Dabs Guide: Impression	Dabs P	14.95*
1230b	Desktop Dev Env User Gde	Acorn	25.00*
1260b	DTP on the Arch Book	Sigma	14.95*
1214b	DTP Seeds	4Mation	8.45*
BKO2b	File Handling (Book)	RISC Dev	9.95*
BKO3a	File Handling Arc Disc	RISC Dev	4.04
1249c	First Impressions-Manual	Word Proc	29.95*
1269b	Good Impression Manual	Word Proc	26.95*
1255b	Graphics on the ARM Book	Dabs P	14.95*
1248b	Mastering 1st Word +	Dabs P	13.95*
1206e	Prog Ref Manual RISC OS3	Acorn	99.00*
BK13a	WIMP Prog for All Disc	RISC Dev	4.21
BK12b	WIMP Programming for All	RISC Dev	12.95*

CD ROM DRIVES & ACCESSORIES

5750a	CD Caddy	Cumana	6.50
5776e	CD- !Woodland	APA	144.00
5752e	CD- 4 Disc Set	MDI	149.00
5753b	CD- Acorn Educ Directory	APA	29.00
5772c	CD- British Birds	ILP Ltd	150.00
5758c	CD- CD Francais	CDT	120.00
5769c	CD- Creepy Crawlies(MDI)	CDT	90.00
5773c	CD- Dict of Living World	MDI	175.00
5779d	CD- Dinosaurs! (MDI)	CDT	124.00
5764c	CD- Grooves (MDI)	CDT	90.00
0305c	CD- Hutchinson Encyclope	PEP/Attica	99.00
0306b	CD- Illus. Holy Bible	APP Ltd	23.00
0307b	CD- Illus. Shakespeare	APP Ltd	23.00
5770c	CD- Image Warehouse(MDI)	CDT	53.00
5774c	CD- Revelation II	Longman	98.00
0308b	CD- Sherlock Holmes	APP Ltd	23.00
0309b	CD- Space Encyclopaedia	APP Ltd	57.50
5777c	CD- The Really Useful v1	APA	47.00
5778c	CD- The Really Useful v2	APA	47.00
5775c	CD- Times & Sunday Times	TNS	195.00
0290g	CD ROM Drive A3000	Cumana	589.00
0231g	CD ROM Drive A5000	Cumana	589.00
5862g	Multimedia 16bit SCSI	Acorn	599.00
5861g	Multimedia 8bit SCSI	Acorn	599.00
5860g	Multimedia Expan. Card	Acorn	499.00
5864g	World of CD 400/540/5000	Cumana	637.44
5863g	World of CD A3000/3010+	Cumana	637.44

COMPUTER UPGRADES & EXPANSION

0140c	2-4Mb for 0130 (5/92 on)	RISC Dev	99.00
0132c	2-4Mb for 0130 (to 5/92)	RISC Dev	99.00
0133c	A3000 1Mb RAM	RISC Dev	31.00
0130c	A3000 1Mb RAM (Ugdable)	RISC Dev	59.00
0131e	A3000 4Mb RAM	RISC Dev	139.00
0228e	A3000 Podule Expander	Wild Vis	159.85
0277b	A3000 Serial Chips	Acorn	19.00
4610e	A3000/A4000 User/Anal.	RISC Dev	44.95
4611e	A3000/A4000 User/Anlg/Ec	RISC Dev	79.95
0144c	A3010 1Mb RAM	RISC Dev	29.00
0318c	A3010 1Mb RAM	Acorn	49.00
0146e	A3010 4Mbyte RAM	RISC Dev	129.00
0145c	A3020/A4000/A4 2Mb RAM	RISC Dev	89.00
0319c	A3020/A4000/A4 2Mb RAM	Acorn	99.00
0125e	A310 4Mb RAM	RISC Dev	269.00
0768c	A310 4way B'Plane + Fan	Ifel	52.00
5850d	A4 2Mb RAM for FD System	Acorn	105.00
0278c	A400/1 Series 1Mb RAM	RISC Dev	27.00
0141e	A410/1 8Mb RAM Card	RISC Dev	569.00
0142e	A420/1 8Mb RAM Card	RISC Dev	509.00
0143e	A440 & A440/1 8Mb RAM	RISC Dev	479.00
0147g	A5000 2->8Mbyte RAM	RISC Dev	499.00
0124c	A5000 2Mb RAM	RISC Dev	99.00
0267e	A5000 2Mb RAM	Acorn	129.00
0148g	A5000 4->8Mbyte RAM	RISC Dev	429.00
0225g	A540 2Mb RAM	Acorn	253.16
9981	ARM 3 A3000 Fitting	RISC Dev	30.00
0134e	ARM 3 Upgrade	RISC Dev	165.00
0775g	ColourCard	CC	245.00
0784c	Disc Buffer 400/1 & 540	RISC Dev	34.95
0135c	Disc Buffer A3000	RISC Dev	39.95
0795c	Disc Buffer A310/A440	RISC Dev	34.95
0127c	Disc Buffer A5000	RISC Dev	34.95
0774e	FaxPack	CC	287.00
0222g	Floating Point Accelerat	Acorn	99.00
0271c	I/O Podule - Arch	Acorn	79.95
0236b	MEMC1A Upgrade Kit	BEEBUG	25.00
0272c	Midi Add-on to I/O Arch	Acorn	28.95
0273c	MIDI Podule - Arch	Acorn	69.00
0238c	MIDI/User Port A3000	Acorn	46.55
5849c	Numeric (Maths) Co-Pro	Aleph One	99.00
5461c	Oak-Recorder II	Oak	39.95
5848b	PC Windows Driver S'ware	Aleph One	25.00
5844g	PC386 1Mb Card For Arch	Aleph One	369.00
5870g	PC386 1Mb For A3020/4000	Acorn	275.00
5845g	PC386 4Mb Card For Arch	Aleph One	469.00
5846g	PC486 1Mb Card For Arch	Aleph One	461.00
5847g	PC486 4Mb Card For Arch	Aleph One	553.00
5871g	PC486 4Mb For A3020/4000	Acorn	499.00
0884b	RISC OS 3 Hardware Kit	Ifel	21.00
0887b	RISC OS 3 Hardware Kit	Acorn	25.53
0888d	RISC OS 3.1	Acorn	41.70
0889b	RISC OS 3.1 for A5000	Acorn	16.17
0158e	SCSI 16bit Card For Arch	Oak	189.95
0863e	SCSI Card (Cumana) Arch	Cumana	189.95
0216g	SCSI Card (V 3) For Arch	Acorn	250.00
5297b	User Port Power Supply	RISC Dev	17.00
0139b	VIDC Mode Expander	RISC Dev	29.95
5441e	ZY-FI Stereo Speaker Sys	Zydec	34.74

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A3010 Family Solution with AKF30 colour monitor, and 4 games: Lemmings, Apocalypse, Chuck Rock and James Pond **SAVE OVER £250**

0179g **A3010 Home Professional System** £765.11
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0312g	A4 Portable 4Mb HD210	BEEBUG	1829.00
5872g	A5000 4Mb HD210 M'scan	BEEBUG	1789.00
5873g	A5000 4Mb HD420 M'scan	BEEBUG	2130.00

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0638d	100x3.5HD 2MB Bulk Discs	BEEBUG	75.00
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0674b	10x3.5HD 2Mb Discs + Box	BEEBUG	12.00
0676c	40x3.5 1Mb Discs + Box	BEEBUG	23.33
0636c	40x3.5HD 2Mb Discs + Box	BEEBUG	42.00
0632c	50x3.5 Bulk 1Mb Discs	BEEBUG	22.50
0637c	50x3.5 HD 2Mb Bulk Discs	BEEBUG	40.00
0672b	Disc Box for 3.5 (10)	BEEBUG	1.69
0656c	Lockbl 3.5 Disc Box (40)	BEEBUG	4.13
5646c	Lockbl 3.5 Disc Box (80)	BEEBUG	8.47

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1364g	A3 Univ Concept Keyboard	Concept K	115.00
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1359b	Concept K'bd Arch I'face	Concept K	29.00

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FLOPPY DISC DRIVES

0128g	3.5 2nd Drive Kit	RISC Dev	125.00
0279g	400 Series 2nd Floppy Dr	Acorn	70.00
0604g	CD800S Dual 40/80T Drive	Cumana	225.00
0617g	CS354 3.5 + PSU Drive	Cumana	94.00
0603g	CS400 40/80T + PSU	Cumana	119.00
0616g	CSX354 Disc Drive	Cumana	79.00
0602g	CSX400 40/80T Drive	Cumana	99.00

HARD DISC DRIVES

5283g	A3000 External IDE 120Mb	RISC Dev	369.00
5285g	A3000 External IDE 210Mb	RISC Dev	489.00
5286g	A3000 External IDE 450Mb	RISC Dev	689.00
5270g	A3000 Internal IDE 20Mb	RISC Dev	199.00
5272g	A3000 Internal IDE 80Mb	RISC Dev	299.00
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5242g	A3010 Internal IDE 80Mb	RISC Dev	289.00
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5232g	A3020 Internal IDE 80Mb	RISC Dev	229.00
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5235g	A3020 Internal IDE 210Mb	RISC Dev	479.00
5851g	A4 60Mb HD Upgrade	Acorn	350.00
5296g	A5000 120Mb 2nd Drive	RISC Dev	219.00
5294g	A5000 210Mb 2nd Drive	RISC Dev	319.00
5298g	A5000 450Mb 2nd Drive	RISC Dev	519.00
5263g	Arch External IDE 120Mb	RISC Dev	359.00
5265g	Arch External IDE 210Mb	RISC Dev	479.00
5256g	Arch External IDE 450Mb	RISC Dev	579.00
5266g	Arch External IDE 450Mb	RISC Dev	679.00
5290g	Arch IDE 20Mb Hard Card	RISC Dev	199.00
5291g	Arch IDE 60Mb Hard Card	RISC Dev	359.00
5292g	Arch IDE 80Mb Hard Card	RISC Dev	299.00
5293g	Arch IDE 120Mb Hard Card	RISC Dev	379.00
5295g	Arch IDE 210Mb Hard Card	RISC Dev	529.00
5253g	Arch Internal IDE 120Mb	RISC Dev	259.00
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0569b	Printer Lead 1.8m Arch	BEEBUG	5.91
0425b	Printer Lead 2m Arch	BEEBUG	7.62
0424b	Printer Lead 3m Arch	BEEBUG	8.47
0578c	Printer Lead 5m Arch	BEEBUG	16.98

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5913b	Chatter	4Mation	34.00
0093c	Hearsay II	RISC Dev	75.00
0776e	Linnet 2400 Modem	Pace	255.28
0779e	Linnet Plus Modem	Pace	119.11
0777e	Linnet Quad Modem	Pace	297.83
3111g	SM2400 + Hearsay II+Lead	BEEBUG	139.00

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0190g	Acorn AKF18 Multiscan	Acorn	275.00
0182g	Acorn AKF30 Monitor	Acorn	220.00
0180g	Acorn AKF40 Monitor	Acorn	220.00
0532g	Cub 2038 20in Monitor	Microvitec	999.00
0525g	Cub-Scan 1440 Monitor	Microvitec	399.00
0546e	Monitor Filter	Memorex	78.60
0503g	Phillips Green Monitor	Phillips	87.00
0501g	Ranger 5017 Monitor	Aydin	853.00
0502g	Ranger 5021 Monitor	Aydin	1380.00
0545d	Screen Filter 14 C.Fibr	BEEBUG	24.64
0544g	TouchScreen for CUB3000	Microvitec	95.00

NETWORKS

5076b	!APPFS	Angelsoft	100.00
4601e	A3000/3010 Ethernet Card	RISC Dev	139.00
5025b	A3020/4000 Econet Module	Acorn	49.00
4602e	A3020/A4000 Eth'net Card	RISC Dev	139.00
5853c	A4 Econet Upgrade	Acorn	50.00
4600e	Arch/A5000 Ethernet Card	RISC Dev	139.00
5005c	AUN Level IV Fileserver	Acorn	394.00
5006c	AUN Level IV SL Upgrade	Acorn	199.00
5003b	AUN Level IV Upgrade	Acorn	30.00
5075b	Classprint LD	Oak	75.00
5017b	Econet Upgrade M128/Arch	Acorn	47.95
5037e	Ethernet A3020/A4000 Int	Acorn	149.00
5038e	Ethernet Card for A4	Atomwide	199.00
5008c	TCP/IP Programmers Pack	Acorn	50.00*
5009c	TCP/IP Protocol Suite	Acorn	199.00

POCKETBOOK ACCESS/SOFTWARE

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0584b	Flash Disc 256K	Acorn	59.53
0588c	Flash Disc 512K	Acorn	85.06
0587b	Mains Lead -Pocket Book	Acorn	12.72
0586b	OPL Editor	Acorn	59.53
0390e	Pocket Book Computer	Acorn	170.17
0591b	Pocket Book Desk Stand	Widget	13.61
0589b	Pocket Book Finance Pack	Widget	59.53
0590b	Pocket Book Games Pack	Widget	42.51
0392g	Psion 3 256k	Psion	195.00
0583b	RAM Disc 128K -Pocket Bk	Acorn	51.02
0596b	Schedule - Pocket Book	Acorn	16.98
0597g	Schedule Class Pack	Acorn	170.17

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0428c	Crossover switch 2x2	BEEBUG	34.00
0407c	Labels 1000 x 3.5	Label-Trac	6.17
0454c	Labels 2000 3.5	Label-Trac	10.50
0515c	Laser Printer Labels	Avery	9.96
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5644d	Paper 15.3x11 60gsm 1pt	BEEBUG	17.00
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0455d	Paper A4 70gsm Fanfold	BEEBUG	14.40
5643d	Paper A4 90gsm 1-part	BEEBUG	12.60
0405d	Paper A4 Handipack	BEEBUG	11.26
0421c	Photocopy Paper	BEEBUG	3.36
0538c	Print Sharer 2 to 1 Auto	BEEBUG	32.34
0539e	Print Sharer 4 to 1 Auto	BEEBUG	42.55
0427c	Printer Sharer 2 to 1	BEEBUG	16.98
0567c	Printer Sharer 4 to 1	BEEBUG	28.57

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0365g	Canon BJ10sx - White	Canon	185.00
0451g	Canon BJ20 - Cream	Canon	265.00
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0346g	Canon BJ230 Printer	Canon	322.00
7510g	Canon BJ300 Printer	Canon	349.00
7511g	Canon BJ330 Printer	Canon	380.00
7525g	Canon BJC800 Printer	Canon	1370.00
0380g	Epson FX1050 Printer	Epson	403.75
0328g	Epson FX850 Printer	Epson	323.75
0388g	Epson LQ100 Printer	Epson	176.40
0326g	Epson LQ1060 Colour	Epson	723.75
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0376g	Epson LQ1170 Printer	Epson	517.20
0379g	Epson LQ200 Printer	Epson	182.00
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0374g	Epson LQ570 Printer	Epson	240.00
0327g	Epson LQ860 Colour	Epson	543.75
0382g	Epson LQ870 Printer	Epson	424.80
0377g	Epson LX100 Printer	Epson	155.00
0386g	Epson LX1050 Printer	Epson	329.00
0378g	Epson LX400 Printer	Epson	136.13
0322g	Epson LX850 Printer	Epson	172.50
0381g	Epson Stylus 800 Printer	Epson	239.00
0461g	HP Deskjet Portable	HP	295.00
7530g	HP Laserjet 4 Printer	HP	1120.00
0490g	HP500C Colour Deskjet	HP	269.00
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0494g	HP550C Colour Deskjet	HP	449.00
0497e	LaserDirect HiRes Card	CC	324.00
0496g	LaserDirect HiRes4	CC	895.00
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0471g	Star LC-20 Printer	Star	113.00
0436g	Star LC-200 Colour	Star	160.00
0444g	Star LC24-100 Printer	Star	162.00
0338g	Star LC24-15 Printer	Star	249.00
0367g	Star LC24-20 II Printer	Star	189.00
0337g	Star LC24-20 Printer	Star	184.00
0402g	Star LC24-200 Colour	Star	220.00
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0442g	Star SJ48 Inkjet Printer	Star	189.00
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1963g	ScanLight II A4 Arch	CC	285.00
1962g	ScanLight Jnr 256 - Arch	CC	185.00
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0117g	Spectra (A3000 External)	RISC Dev	559.00
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0118g	Spectra Archimedes/A5000	RISC Dev	549.00

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5470c	Payroll Manager	Silicon VI	82.00
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0923b	Prophet Entry Level	Apricote	8.00
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1917c	Share Holder	Silicon V	102.13

SOFTWARE - CAD

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0913c	Arc-PCB	Silicon V	99.00
1931c	CADet	Minerva	133.00
1932b	KiddiCAD	Oak	58.00
0959c	Oak P.D.T.	Oak	189.00
0958c	Oak PCB	Oak	93.00
1945g	ProCAD	Minerva	393.00
1910c	SolidCad	Silicon V	78.00
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1936b	WorraCAD	Oak	93.00

SOFTWARE - DTP

1113c	Impression II DTP	CC	117.00
1115c	Impression Junior	CC	64.00
0114	Ovation Demo Disc	RISC Dev	4.25
0108c	Ovation DTP	RISC Dev	99.00

SOFTWARE - DTP TOOLS/UTILITIES

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0096b	Desktop Thesaurus	RISC Dev	19.00
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PFNTa	RISC User Fonts Disc	RISC Dev	12.68
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5761b	Graph_IT	Sherston	19.00
5782b	Hilighter	Sherston	32.00
5738c	Insight	Longman	68.00
1949c	Kid Pix	ESM	34.00
5747b	Linkword - French	Minerva	36.00
5748b	Linkword - German	Minerva	36.00
5746b	Linkword - Spanish	Minerva	36.00
0905c	Logo	Longman	54.00
5471c	Magpie	Longman	40.00
5798b	Micro French	LCL Soft	24.00
5931b	Naughty Stories Vol 1	Sherston	48.00
5936b	Noddys's Playtime (3-7)	Jump Bean	20.00
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5923b	Pendown Etoiles	Longman	49.00
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5929b	Phases #3	NW SEMERC	19.00
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5455b	ProSHEET	Silicon Vi	39.00
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5924b	Story	H & H Soft	16.98
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5712b	Teddy Bears' Picnic	Sherston	23.00
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5485c	Topographer	Clares	62.00
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5608b	Typing Tutor	Willow	23.90
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0997b	Arcade Soccer	4th Dimens	17.00
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5451b	Black Angel	4th Dim	25.00
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5714b	Christmas Adventure	Krisalis	22.12
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5476b	Elite Gold	Hybrid	32.00
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1982b	Fervour	Clares	18.00
5494b	Games Wizard	Leading Ed	25.00
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1993b	Interdictor 2	Clares	25.00
1988b	Iron Lord	UBI Soft	14.00
5724b	James Pond	Krisalis	19.00
1985b	Krisalis Collection	Krisalis	20.50
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5546b	Lemmings	Krisalis	18.00
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5568b	Manchester Utd Europe	Krisalis	19.00
5475b	Master Break	Superior	14.00
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5794b	Oh No! More Lemmings	Krisalis	15.00
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5422b	Quark	Oregan	21.23
5797b	Quest For Gold	Krisalis	18.95
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5565b	Real McCoy III	4th Dimens	24.00
5548b	Real McCoy IV	4th Dimens	27.00
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5474b	Saloon Cars Extra Course	4th Dimens	15.00
5434b	Sim City	Krisalis	23.00
5443b	Spheres of Chaos	Matt Black	19.00
5799b	Stunt Racer 2000	4th Dimens	28.04
1986b	Superior Golf	Superior	12.00
5790b	Swiv	Krisalis	18.00
5438b	Technodream	Superior	19.00
1997b	Virtual Golf	4th Dimens	25.00
1179b	Zarch	Superior	14.00
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5521b	ArcLight	Ace	43.48
1942b	ArcTist	4th Dimens	18.00
1103b	Artisan II	Clares	42.00
1938d	Artworks	CC	124.00
0962b	Atelier	Minerva	68.00
5488c	CableNews	Lingenuity	136.00
5912b	Chameleon	4Mation	33.00
PCHWb	Chartwell	RISC Dev	25.49
5914b	Craftshop 1	4Mation	19.00
5915b	Craftshop 2	4Mation	19.00
5749d	Designer V3	Techsoft	193.00
1937b	Euclid II RISCOS	Ace	54.00
5520b	Film Maker	Silicon V	86.91
1090c	Graph Box Professional	Minerva	102.00
0912b	Graph Box v2	Minerva	56.00
5761b	Graph_IT	Sherston	19.00
5442b	Illusionist	Clares	68.00
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1949c	Kid Pix	ESM	34.00
5937b	Poster	4Mation	85.00
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5492c	PrimeArt	Minerva	68.00
0944c	Pro-Artisan 2	Clares	110.00
5509b	Render Bender II	Clares	75.00
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5938b	smArt	4Mation	50.00
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1941b	SuperPlot	Silicon V	24.80
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5427b	DeskTop Office II	Minerva	74.00
0901c	Pipedream 3	Colton	71.00
0990c	Pipedream 4	Colton	118.00

SOFTWARE - LANGUAGES/COMPILERS

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0107c	C Dev. System	RISC Dev	77.39
1907b	Cambridge Pascal	OAK	89.00
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0100b	Easy C	RISC Dev	49.00
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1906b	RiscBasic Compiler	Silicon V	77.00
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1971b	MicroStudio	EMR	66.00
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5461c	Oak-Recorder II	Oak	39.95
5486c	Rhapsody 3	Clares	77.00
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5523b	Serenade	Clares	105.00
5457b	Sound Tracker	Leading Ed	36.00
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5459b	Voice Generator	MID	30.00
5513b	Vox Box	Clares	45.50
5441e	ZY-FI Stereo Speaker Sys	Zydec	34.74

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1966b	ESM Screenprint (Epson)	ESM	37.37
1968b	ESM Screenprint (Star)	ESM	40.00
5527a	Expression-PS	CC	15.00
0095b	HP Deskjet Colour Driver	RISC Dev	15.00
0090b	Star/Epson Colour Driver	RISC Dev	15.00
1940b	SuperDump	Silicon V	19.00
5503d	Turbo Driver - Colour	CC	95.00
5505c	Turbo Driver - BJ Series	CC	42.00
5508b	Turbo Driver - HP Deskjet	CC	42.00
5511b	Turbo Driver - Epson Styls	CC	42.00

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5913b	Chatter	4Mation	34.00
1106b	Compression	CC	34.00
5456b	Disc Rescue	Look	28.00
5109c	Disc Sharer	Soft Soln	137.00
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5445b	Invstgator II RISCOS 2	Leading Ed	21.00
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5939b	Snippet	4Mation	32.00
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5917b	DBEdit	4mation	28.00
PDE2b	DeskEdit 2	RISC Dev	27.19
5427b	DeskTop Office II	Minerva	74.00
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5551b	Easiwriter Dict. French	Icon	26.00
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THE ACORN USER

It's bursting at the seams. Games, utilities, programming examples

XENON 2

Make your Arc an alien-free zone

Xenon 2 is the hottest shoot-em-up you're going to see this side of Christmas. Our exclusive demo is a taster of things to come: experience the power of the *Xenon II* ship and fly it to destruction.

Controls for the game are as follows:

Z	Left
X	Right
'	Up
/	Down
RETURN	Fire
P	Pause (on/off)

How to play

When you run the game it installs itself on the iconbar: click on the *Xenon II* icon to and you see a swirl of stars.

Press RETURN to move to Options. Move the arrows up and down using the Up and Down keys; to play the game, move to '1 Player Game' and press RETURN.

The object of the game is simple: blow the hell out of everything you see, collect power-ups, and buy equipment for your ship so those boys are too scared even to talk to your mother-in-law.



Blasting the hell out of everything and everyone in sight with Xenon 2

The first items you want are the speed-up pills so you can race after the enemy. The first two pills move across the screen from left to right: shoot them to turn them into spinning spheres marked with an 'S'. Other items turn into spinning spheres branded with a 'C': these are credits, and picking them up will give you money to spend on your ship.



When you enter the shop, you have the option to sell weapons to gain credits. If you do not wish to sell anything use the control keys to move the yellow cursor to 'EXIT', then hit RETURN. If you want to sell, move the cursor to 'SELL' and press RETURN.

To sell a particular piece of equipment, move the cursor over the item to sell and press RETURN. To finish, 'EXIT'.

After this a selection of extras appears if you have enough money. Use the yellow cursor and RETURN to select the item you want and press RETURN twice to buy. See page 75 for a full review.

Running notes

If you have a 2Mb machine then the demo will run from floppy without a problem. However, if you have 1Mb of Ram, then you must decompress the game before running it. To do this, run this option to open the directory viewer as described below, and drag the *!Xenon2* application to another disc. Then reset your machine, and run the application from the new disc without mounting any other discs beforehand.

If you have a 1Mb machine with Risc OS 3 (such as an A3010) you must reduce the font cache down to zero to allow the demo to run. Do this by using the Task Manager: click with Select on the Acorn icon on the iconbar and drag the bar marked 'Font cache' to zero. Finally, you must make sure the desktop is in Mode 12 before running.

COVER DISC

and the latest in graphics techniques: it's all on the Acorn User cover disc

OMNIDESK

Part one of our flexible friend

OmniDesk is the ultimate flexible desktop application. If you've ever wished you had a collection of some of your most useful desktop utilities rolled into one application, *OmniDesk* is straightforward to operate. *OmniDesk* at present provides five basic



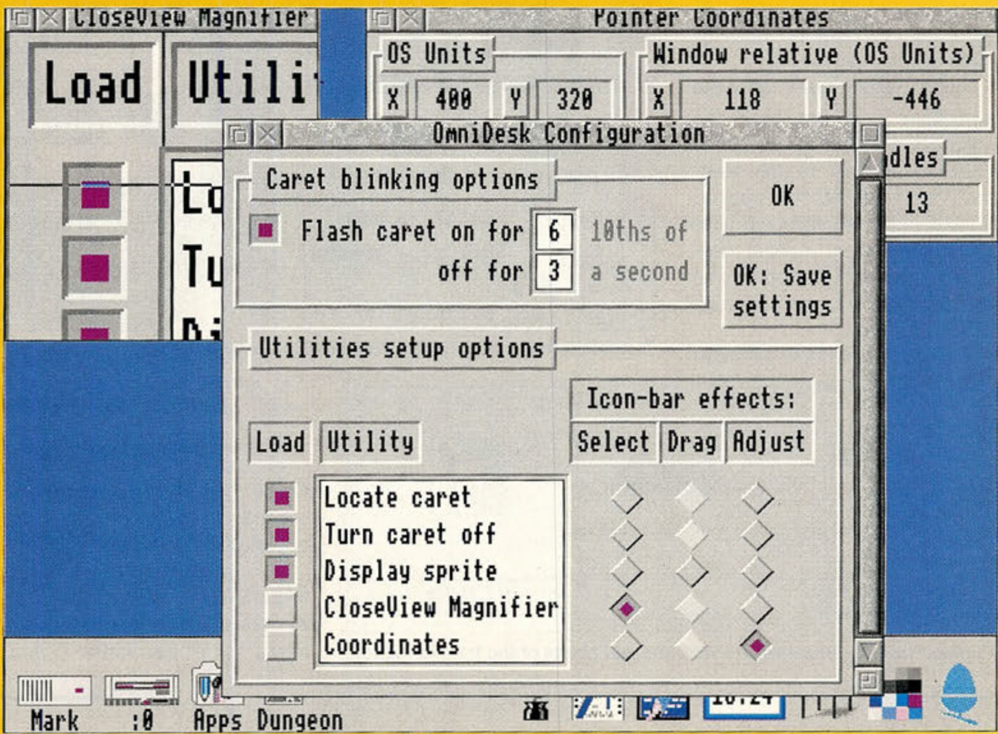
utilities. Every month we'll provide extra utilities. Looking at the configuration window, you will notice that the top area is labelled Caret blinking options. This utility will flash the caret at a user-defined rate. Simply enter the on and off periods in tenths of a second and make sure the switch at the left is selected.

A 'hidden' utility provided by *OmniDesk* is the ability to use the cursor keys to move the pointer. The cursor keys move the pointer in steps of one pixel for fine positioning, while pressing SHIFT, CTRL or CTRL-SHIFT at the same time will increase the speed.

Locate caret will bring the window containing the caret to the front, and the pointer will zoom towards the caret. If the caret is not present, the computer will beep.

Choosing *Display sprite* from the Utilities menu will open a small window. Dragging sprite files to it will display the sprites on the screen, which is useful for previewing artwork or taking screen shots. Click the mouse or press a key to return to the desktop. *OmniDesk* can also cope with Clares' Xarc file format.

Choosing the Turn caret off utility has the very simple effect of removing the caret. This provides an easy means of making sure *OmniDesk* can detect the cursor keys for moving the pointer.



The omnipotent, omniscient, and you'll soon find omnipresent, OmniDesk

OMNIDESK

The ultimate flexible desktop application

Extra utilities

The prime feature of *OmniDesk* is its ability to be extended by other utilities which all have a common presentation. If you double-click on the *OmniDesk* icon with SHIFT held down, you see it contains a further directory: Utilities. You run these utilities independently of *OmniDesk* by double-clicking on them: if you do so, they will install their icons on the iconbar as normal, and will not be affected by OmniDesk in any way. Each application has its own help files containing instructions. *OmniDesk* utilities all have similar presentations: from their main windows, there will always be a menu which presents at least three options: Info, Window position and Save settings.

There may well be other options too. Info accesses the usual information window, while the Window position leads to a window which lets you determine where a utility's window appears onscreen. The other option, Save settings, saves the location of the window to disc for subsequent use. All the utilities support interactive help. For complete instructions, look at the file !OmniDesk.Docs.ReadMe.

MORPHEUS

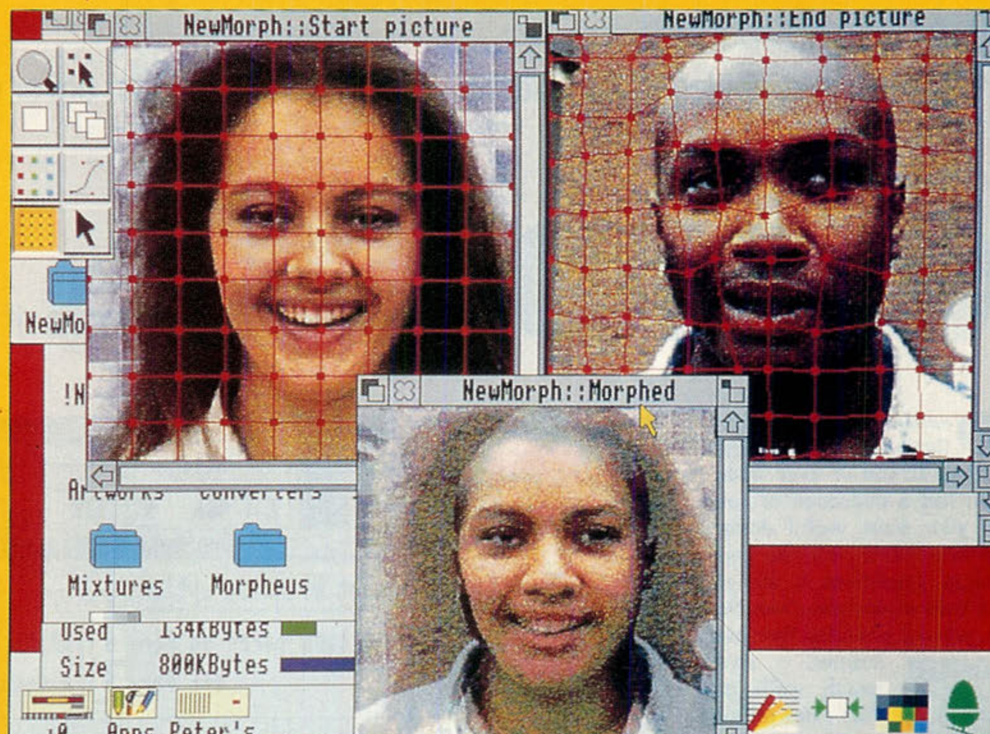
Bridging the picture gap

Morpheus is the first commercial morphing package available for the Archimedes, and this demo version from Oregan shows why it seems destined to be a hit (see the review on page 56).

Morphing is the act of taking one picture and changing it into another: our very own morphing package from the August issue proved very popular indeed.

In the last couple of years the process has been used to devastating effect in Arnie's *Terminator 2* and in loads of pop promos and TV ads.

For a quick demo of what *Morpheus* can do, load the application and drag the Uffebrooke directory to the iconbar. Two windows will appear, the left-hand one showing Uffe Ellemann-Jensen, former foreign secretary of Denmark, and the right-hand one showing Brooke Shields.



A subtle transformation from Jade to Kevin using Morpheus

To create a preview frame of the morph from one to the other, click on the 'single square' toolbox icon, which opens up a window. Click on the *Morph* icon and after a few seconds a window pops up containing the morph.



These sprites are the respective start and end points of the transformation

If you want to view an intermediate stage on the morph, click on the radio icon to the left of the Frame # icon, and set the number to between one and ten: one is Uffe, and ten is Brooke. Five is, for want of a better word, UffeBrooke.

The demo is complete in most areas, though you cannot save sprites or movies. Full instructions are provided on disc, along with the example described above. Hope you enjoy it.

3D Graphics

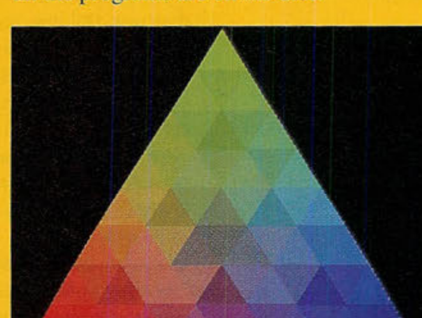
This final instalment of our long-running and popular 3D Graphics series culminates in a complete editor for 3D objects, which can be displayed using the *BAU3D* module.



The last part of our 3D programming series

*Info

What do the following have in common: wacky graphics demos, screen fades, directory setters and the secrets of the Shared C Library? *INFO, of course, and all the programs are on the disc.


*Info: the pages with something for everyone

Bio

Life continues to thrive with the latest instalment of *Bio*, our totally flexible desktop application. Sprite merging and module information are on the menu this month, for your delectation.

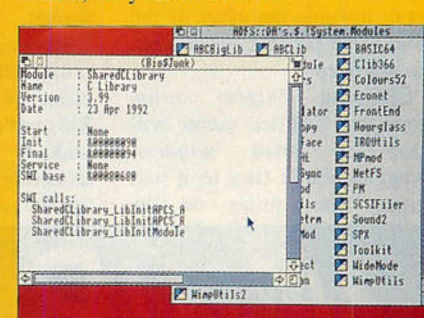

Another addition to the ever-growing Bio

PHOTO CD LATEST DEVELOPMENTS

PHOTO CD is Acorn's development of a technology conceived by the film manufacturers, Kodak. Each CD, which requires single or multisession-compatible CD-Rom drives, provides a large number of images with a four-level magnification facility.

But unlike zooming into a sprite as in *Paint*, the magnified images will retain their full resolution and quality. This has been made possible by storing picture files containing the 'base' together with images of 2x, 4x, 8x, and 16x the resolution of the original.

On magnifying part of the base by, for instance, the x4 magnification, the appropriate part of the 'base x4' image will be loaded from the CD-Rom.

There are advantages to storing versions of the same image, rather than one high resolution image. First, zooming out of high-resolution sprites causes deterioration of image quality; also, if there is a variety of resolutions available you have the choice of working with a low-res image to save memory space.

The resolutions begin at 128 x 192, for the base, to 2048 x 3072 for base x16. Each image file, will be 25Mb in size, and with 100 of these crammed onto each CD, there will be an effective 2.5Gb of data per disc, thanks to Kodak's YCC compression system. Because of their highly-squashed state, the decompression times of images are likely to be slow.



Acorn's ship comes in with Photo CD

Acorn will supply a new version of *ChangeFSI* to convert YCCs into sprites but until Risc OS can display 24-bit colour, the full potential of Photo-CD will remain unseen.

Those with graphics cards which support 15- and 16-bit colour, can view pictures outside the desktop.

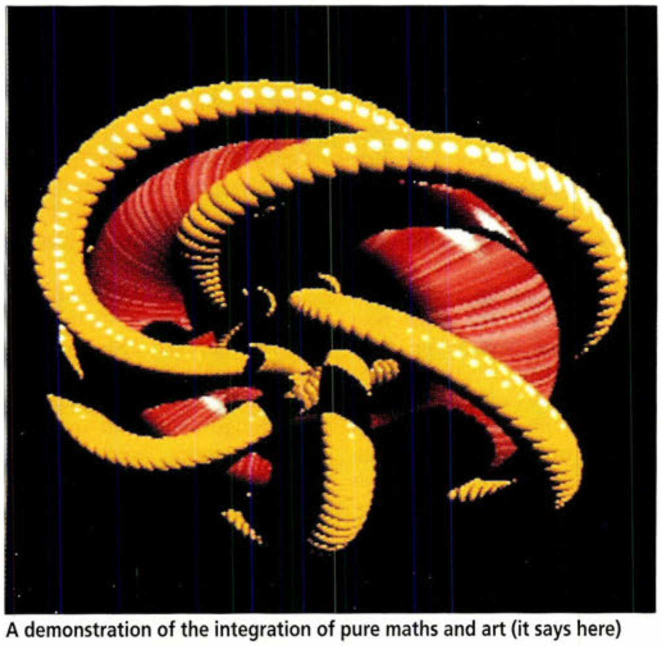
Professional DTP and the interactive games market look like two probable destinations for this new technology. But, as yet, Photo CD is more of a foundation upon which third parties are expected to build, with the developers toolkit available from Acorn at probably the same price as similar packages for the Mac and PC: £400-500.

PRIZE PICTURE GOES DUTCH

THIS month's prize pic originates from Holland and is the work of P Gosselink. He has demonstrated not only mathematical skill but also artistic talent in creating this beautiful geometric form.

Based on the structures as described in a *Scientific American* article (Jan '91) the 3D sculpture bears a strong resemblance to those in the award-winning animations of William Latham, IBM, focussing on the integration of pure maths with art.

The structure was generated in a custom *Basic* program, which wrote a description file for the PD raytracer, *QRT*. If you wish to submit a picture, please send details of the methods you used along with your images.


A demonstration of the integration of pure maths and art (it says here)

In brief

In-4Mation

4Mation has released a program called *Hatchback*, which will enable *Draw* objects to be filled with a choice of nine patterns (or chloropleths) including dots, lines, hatches and dashes.

The fill style can be edited in terms of angle and density to achieve the desired effect.

This will be good news both for those with monotone printers and for Cad designers, who will reap the benefits of custom monotone patterning.

What's the point?

The Floating Point Accelerator has finally arrived, but do increased SI benchmarks and megaflops actually mean anything to graphics users?

The chip takes the burden of floating-point maths routines off the Arm, and, acting in parallel, increases speed performance in mathematically-intensive tasks such as are commonly set by graphics programs.

Can hour-long renderings be reduced to minutes? Are the days of endless waiting for *Draw* to redraw over?

Although future graphics packages will most certainly take advantage of the FPA, the full review on page 63 looks in detail at who or what will benefit at present, from this new, number-crunching co-processor.

Power up

Iota software has announced that the latest version of its database program, *Datapower*, will accept *Artworks* files.

This makes *Datapower* compatible with all the standardised graphics formats – sprites, *Draw* files and *Artworks*, enabling fully-comprehensive graphics databases to be compiled.

(For a full update on what the package has to offer, see the *Datapower* article on page 59 of this issue.)

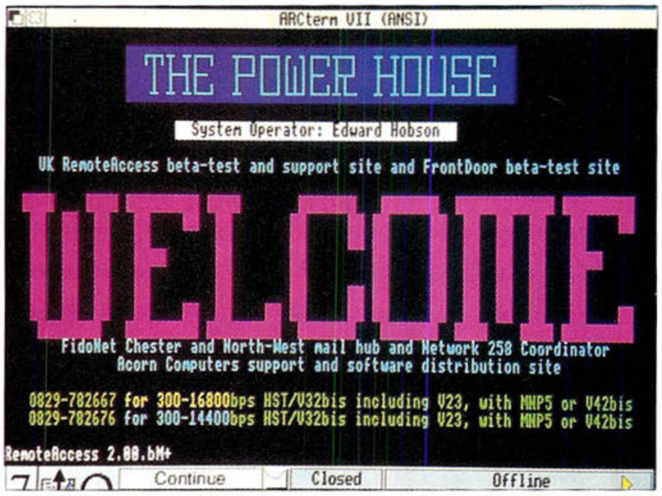
ProArtisan hold-up

We must apologise for the absence of the *ProArtisan 2* review from this issue due to delays in producing the finished user manual.

PC NETWORK POWER FOR THE ARC

THE Power House BBS is run by Edward Hobson from Malpas in Cheshire.

Edward's PC-based BBS runs *FrontDoor* and *RemoteAccess* BBS software on a multi-tasking 386DX machine, with 405Mb of storage, and two lines connected to US Robotics Courier modems. No subscription is required, but user contributions in the form of hardware, software or finance are always acceptable.



The Power House extends a welcome

Although running on an IBM PC, Power House offers considerable support to Archimedes and Acorn users, with a good selection of file download areas ranging from Desktop applications to PocketBook utilities. It's a pity Acorn has lost interest in the Acorn Support BBS scheme, of which TPH was a part, as dealer support in some areas has become very sparse, particularly in Scotland.

The Power House PC file areas cover a wide range too, with an emphasis on BBS and mailer software. TPH has just been appointed a beta-test site for *RemoteAccess* BBS software, and features support message conferences for this and a number of other PC BBS software packages.

Unusual features to be found on The Power House include a section of online Ansi music demonstrations for those lucky enough to have music capability built in to their terminal software. The Entertainment also offers online games such as *Tetris*, a trivia game, drag racing and ping-pong.

Hydra is a new bi-directional protocol that allows simultaneous uploading and downloading of files with a built-in chat mode. *Hydra* has been ported to run on Acorn 32-bit machines and Edward has tested and used it, so an evaluation version is available from the Acorn file areas on The Power House.

FidoNet, ChatNet and MetroNet netmail and echomail message conferences are available to all users. There are around 200 conferences covering a wide range of topics, read and written by people all over the world. Subjects as varied as Open University, SoundBlaster and US Robotics modem support are available for discussion – Edward himself is a mine of information on USR modems.

The Power House is online 24 hours on 0829 782667 for calls up to 16k8 HST, and on 0829 782676 at speeds up to 14400bps, both lines supporting V23 (1200/75bps) and MNP5/V42bis compression.

SLIPPING IN AND OUT OF THE NET

UNTIL recently, BBS operators wanting to become part of the Fido Network applied for Node status to the Net Host system of their choice, usually one that was geographically close, to keep call costs down.

Because some nets had a better reputation than others for managing their affairs and in the treatment of the systems of which they were hosts, BBS operators tended to be more influenced by these factors when choosing their host. As a result some nets contained systems with a wide geographic spread.

After a great deal of acrimonious discussion and disagreement between BBS operators and the FidoNet coordinators about whether any changes were necessary, the re-organisation of FidoNet nets into a mostly-geographic basis has begun.

This has meant many BBS systems have had their host system and net and/or node numbers changed. Many operators did not want to be moved for the reasons above, or because of the upheaval in network mail linkages that has inevitably followed.

Several of the well-known Acorn BBS systems that have been mentioned on this page in the past have or will have new FidoNet addresses. StarNet BBS in Norwich, home of the UK Educational message Echoes and MicroFido – FidoNet on a floppy for Schools – has been moved into the new East Anglia Net to become 2:2501/405.0.

The Digital Databank in Welwyn Garden City, at present in Net 254, may be moved to Net 257.

These new geographical groupings are based on telephone code areas, which themselves may not numerically represent adjacent areas.

When Oftel's planned personal numbering is introduced in a few years time, yet another system will have to be found, meaning all-change again.

In brief

Born Borg

Wales has a new, up-and-coming BBS called The Borg. Run by SysOp Craig Senior, the BBS is located in Newport, Gwent, is online 24 hours and supports all speeds up to 16K8bps HST. The system runs ARCbbs software on an A5000 machine. Craig's plans for The Borg feature messaging with 40 to 50 Echomail areas, and includes a massive online storage capacity of over 1Gb of downloads for Acorn users. The current size of the filebase is already over 100Mb. Try out The Borg by calling 0633 897182 - 8N1.

Plasma new blood

Almost everyone who has logged on to an Acorn BBS in the FidoNet network will have seen the name Binkley in the opening dialogue. This is the network mailer interface program ported from IBM PCs to Acorn 32-bit machines. Keith Hall, SysOp of the Plasma Sphere BBS, has been working hard to bring the conversion up to date. The Plasma Sphere BBS, known as "The Home of Arc-Binkley" is now in danger of closing unless new registered users (or donations) enable him to carry on the good work. Call the Plasma Sphere soon for details on 0925 757920 (8N1 -16K8).

Forum for you

Another new Acorn BBS pops up in Scotland called ArcForum. Online between 10pm and 8am, Graham Cant's ARCbbs based system is in Livingston, West Lothian. ArcForum BBS runs on an A5000 machine and supports V22, V22bis and V32 (1200/2400/9600bps). You'll find all the Archimedes and Acorn interest message echoes available on ArcForum, as well as a growing Acorn filebase. ArcForum is open for discussion on 0506 39590.

Call me

You can contact me by writing to: David Dade, Acorn User, 101 Bayham Street, London NW1 0AG or by Email to: DaviD@arcade.demon.co.uk, or by MODEM on Arcade BBS, User #2 - 081 654 2212 or 081 655 4412.

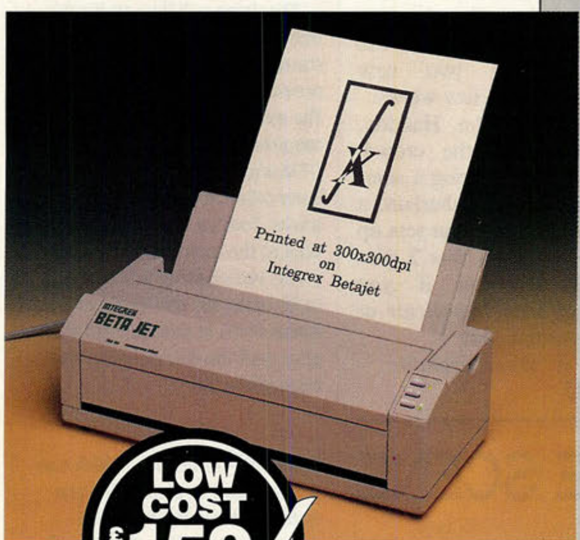


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FRACTALLY EVERYTHING

FRACTAL by Mike Curnow of the Archimedes Fractal Group is one of the most comprehensive fractal creation programs on the Arc. There are 23 functions, to plot anything from Mandelbrot and Julia to plasma and Henon maps.

The program uses a clever method of drawing in fractals so you see the image when it's only partially created.

Full control over palette and plot mode is via the Risc OS menus or toolbar, and support is given to the interactive help facility. A program that does just about anything.

Fractal is available from Datastream – CH008



Anything from the simplest to the most complex fractal creation

CZECH THIS ONE OUT

QUITE a few new PD games have been released in the last month, *Balvaniac* is a mini arcade game from Slovakia.

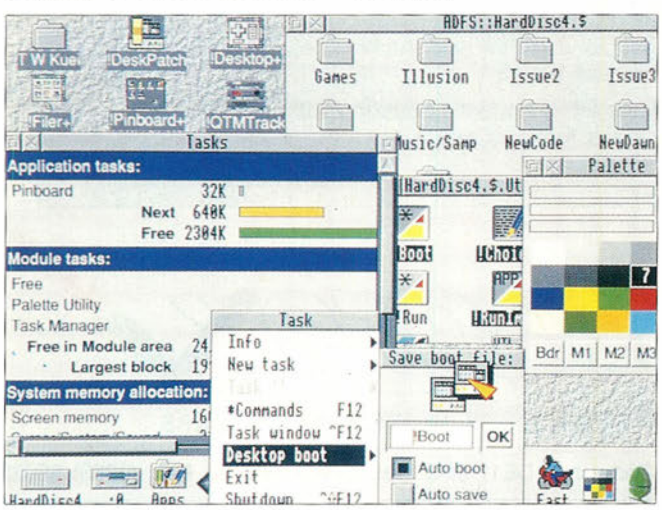
Based on the *Repton* concept, you guide Balvaniac around a maze of earth and walls, avoiding falling rocks and collecting crystals. There's plenty of interest on each level due to the large number of added features like water and various monsters. Keyboard response is poor, but, overall, worth having.

From Datafile – Games 36

DIY YOUR DESKTOP

CODER Ting Kuei has been responsible for several OS3 desktop patch programs, which generally improve the look of the desktop. The best of these, *Deskpatch*, uses features like icon slabbing in, solid icon dragging and anti-aliased text in windows, and is well worth adding to your bootup sequence. The only snag occurs if you have to use the desktop in low res modes, where the text looks a bit naff.

Deskpatch is from Datafile – Utilities 87



Deskpatch can be added to your bootup sequence

IN FLIGHT

THE Flight Simulator Toolkit by SIMIS has produced a profusion of simulators on the PD scene including two new releases in the last few weeks.

Spitfire, by John Haddon, stands out from the crowd. After an intro featuring a sample of Neville Chamberlain, a mouse-controlled menu sets up a variety of World War 2 missions. Tricky, but if you enjoyed playing *Interdictor* or *Mig 29*, worth a look.

Spitfire is from Datafile – Games 35

THE SCENE

THIS month's demo scene is pretty quiet, with most groups working hard on their latest productions to get them finished for the October show.

As far as I know, Armaxess, New Age, Bytepool, Arm's Tech and BASS will all be there as well as my own group Quantum. So there should be plenty of things happening on the scene, and, if you want to get in on the action or hand over any progs for review, ask for me at the *Acorn User* stand or find me in a Redskins cap in the crowd. Watch out for a full report on all the new PD releases at the World of Acorn show, on this page.

In brief

New Age

Coding team Adam Toon and Andrew Neville who make up New Age, have a demo under production which should be released soon. A preview of the four-track music demo revealed a CD player-type music control section accessing a demo for each track. A clever routine in the intro checks if multisync modes are available and, if not, a screen swapping emulator is used to allow hi-res graphics to be viewed.

Armaxess demo

More news from *Armaxess* coder Thomas Alber reveals that the current demo under production (mentioned in the August *Acorn User*) will be extended to two discs packed with music, fx and graphics.

The demo will be a co-production with Ace of Arc Angels, who starred in the scrollers of previous 'axess demos.

The extra length of the demo requires even more music, so QTM and LSD musician EXEL has been called in to create new tracks. Tom's a bit pressed for time at the moment, with work on his vector game which needs to be ready for the World of Acorn show in October. But if all goes well the demo should also be ready in time.

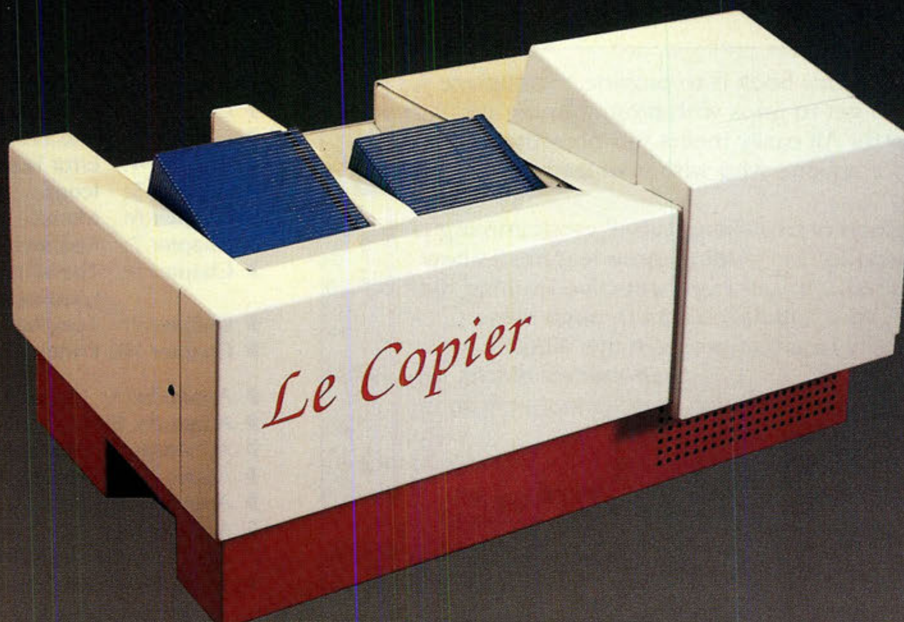
Byte back

Bytepool Productions, which currently seems to be running the German scene, has two new demos on the cards, the first of which will be called *Euphoria*. Zach tells me that *Euphoria* will feature plenty of new fx including a texture-mapped scroller with music by BPP's new musician, Avatar.

Bit back

Beeb users will be glad to know that Eight Bit Software is still alive and kicking, having been taken over by Chris Richardson. Anyone interested in joining the 8BS user group or obtaining the latest catalogue should send an SAE to:

Chris Richardson, 8BS, 17 Lambert Park Road, Hedon, Hull, East Yorks. HU12 8HF.


Le Copier

SHERSTON MARKS END OF ERA

ALL good things must come to an end, and with the publication of *Teddy Bears' Rainy Day*, Sherston Software marks the conclusion of its association with the BBC micro.

A major force in the Beeb market for years, Bill Bonham, Sherston's MD, admits 'It's really quite sad,' especially as the company built its business and reputation on the machine. Sherston will now devote its time to producing educational programs solely for the Archimedes machines.

With *Teddy Bears' Rainy Day*, Sherston goes out on a high note as we meet those furry friends from *Teddy Bears' Picnic* again. This time there are five different games for five to seven-year-olds which can be played in sequence or individually.



Those furry friends are out in force for the last time

Longman Logotron continues to produce packages for this format, to accompany the *Look and Read* educational TV programmes. The latest is *Earthwarp*, an adventure with an environmental theme which incorporates language and maths, plus logical puzzles. BBC *Earthwarp* costs £22 and the Archimedes version, due in January 1994 will be £24, both plus VAT. *Teddy Bears' Rainy Day* is £26.95 plus VAT.

Sherston also has two other new packages – an adventure game called *Aztecs* and *Naughty Stories: Volume 2* (six titles in fact) featuring new characters such as Gordon's Groovy Granny and Derek's Dopey Dinosaur.

Aztecs is priced at £39.95 plus VAT and the *Naughty Stories* are £9.95 each or £49.75 for the lot.

Sherston is on (0666) 840433.
Longman Logotron is on (0223) 425558.

THE FUN OF THE FAIR

TEACHERS, and parents in the South West can see the latest educational IT at a Software Fair, to be held in September near Weymouth.

A number of major software publishers have been invited to participate in the show and the Dorset IT advisory team will be available to discuss the use of computers in the county's schools, particularly the work to encourage cross-curricular use of IT.

The fair is free and takes place on 17 and 18 September at Superchoice Centre in Osmington Bay.

Further information on (0929) 405059.


Your chance to get hands-on experience of IT

PRIZE FOR SCHOOLS

THE National Council for Educational Technology has launched an important new multimedia competition for schools.

The National Educational Multimedia Awards (NEMA) are open to pupils under 19 and to student teachers, who are invited to submit resource collections or multimedia compositions.

Presentations can mix text, graphics, motion video, animation and photographic images and entries can be produced using Arc authoring packages such as *Genesis* and *Magpie*.

Sixteen prizes will be awarded, including a number sponsored by industry.

For details and an entry form, write to The NEMA Office, NCET, Sir William Lyons Road, Coventry CV4 7EZ.

LOGOS FIGHTS ON

THE North Yorkshire Trading Standards Department has dismissed the complaint from Logos, the Logo User Group run by Mike Doyle, that Topologika's *ScreenTurtle* and Sherston's *Crystal Logo* are 'neither Logo nor a good introduction to it'.

Logos was attempting to prove that the educational computer language *Logo*, and what is commonly known as 'turtle graphics', are not the same thing.

When the argument is explained, most people would agree, but the two terms are used interchangeably in the classroom in an attempt to teach problem-solving and spatial awareness, rather than programming.

The Trading Standards Department noted 'there seems to be a general acceptance in the trade that the use of turtle graphics is equivalent to Logo,' so found no grounds for prosecuting the companies.

If there is confusion it is in part due to the National Curriculum orders for maths and IT which use the two as equivalents. Logos, however, is not going to let this matter rest. and has submitted a draft circular to John Patten, clarifying the meaning of the two terms.

If you have something to add to this debate, you can contact Logos at PO Box 43, Houghton-on-the-Hill, Leicestershire LE7 9GX.

WE NEED INPUT

ACORN USER is planning a series of articles about how Acorn computers are being used to integrate IT into core and foundation National Curriculum subjects. If you feel the work your school is doing is worthy of wider publicity, we would love to hear from you, so please contact the magazine at the usual address with details.





Half the fat, but twice the flavour!

Hawk V9 MkII

Hungry for a video digitiser? Now, the Hawk V9 MkII is what you'd call quite tasty. Deliciously clear digitised video live in a desktop window, almost like TV. Mmm mmm, the cream bun of digitisers, with only half the calories! We've slimmed the Hawk V9 MkII down to single width, giving you the space for further expansion card consumption. (We could name a few tempting morsels...).

These new ingredients are added to a successful digitising recipe. The Hawk V9 with its !FastGrab software was one of the first names to become really established as a quality digitiser for the Arc. We're simply in the process of putting the icing on the cake.

Recipe and instructions

The live video display is dithered in hardware, thanks to the latest programmable gate array technology (such as you'd find in Computer Concepts' LaserDirect and Scan-Light cards). Grabbing a sprite, either to save or drag directly into another multi-tasking package couldn't be easier. Because the images are enhanced before reaching the screen, it is possible to simply point, click and save. Of course, the image manipulation routine ChangeFSI is still included if you wish to mould your image further. The whole process is fast, friendly and flexible.

And just to whet your appetite, we promise that the price won't make you throw up (although it might sicken a few competitors!).

Go on, Tuck in!

WILD VISION

15 Whitney Way, Boldon Business Park
Boldon Colliery, Tyne & Wear NE35 9PE
England.
Tel: 091 519 1455
Fax: 091 519 1929



ROBERT CLIFFORD

In a competitive publishing market, how does the Arc fare? Graham Bell looks at the current situation, and offers some tips to improve your DTP output

Get a good **press**

Desktop publishing isn't publishing. It covers only a part of the process – page make-up. But an amazing range of products are DTP'd: most of the thousand-or-so newspapers and bookstand magazines that you see in WH Smith for a start. Then there are corporate publications like brochures, leaflets and advertisements, plus amateur publications – school newspapers, parish magazines, and the like. Plus books and and publications like manuals.

Basic principles

The Archimedes is generally seen as a machine well-suited to desktop publishing. Risc OS certainly has the credentials. Its multi-tasking and drag-and-drop file handling work well. The outline font system is simple from a user's viewpoint: to install a new font, you drag it into your Fonts folder. In contrast, both Macs and PCs generally use separate fonts for the screen and the printer, or have a mixture of different types of font.

The ability to install several printers, to choose between them by highlighting their icons, and to print a document by dragging its icon to the printer is streets ahead of the Mac and PC equivalents.

The main page layout applications on the Archimedes are Computer Concepts' *Impression* and Beebug's *Ovation*. *Ovation* borrows the feel of early versions of *Quark* on the Macintosh, whereas *Impression* is altogether more quirky. Other software tools integrate well with either of these.

Why an Arc?

Until recently, a bald price/performance comparison provided strong reason to buy an Archimedes. But that's gone. Today you can get a name-brand 33MHz 486DX PC that in use seems every bit as fast as an A5000, for the same price. Pricewise, Macs still have a way to go, but you can get a decent price on a Centris 610 these days.

Of course, there's all that Macintosh and Windows software out there too, but don't overestimate this: while the range of software is huge, most of it doesn't sell at all. Any horizontal market is dominated by just one or two packages. The rest are irrelevant.

In the professional world, *Quark Xpress* and *Aldus PageMaker* are the page layout standards. The Archimedes, and *Impression*, are not. Why? Aside from the relative merits of *Xpress* or *Impression*, or of hardware price/performance, companies have to consider the availability of skilled staff, and *Xpress*- and *PageMaker*-trained staff are readily available. Maintenance contracts are also easily available for PC and Mac hardware. And few bureaux can handle Arc discs.

Now there *are* training facilities for *Impression* users. There *are* maintenance companies that know about Archimedes. There are *even* a few bureaux with Archimedes. But finding them is a challenge that makes it easier for the uninformed to choose something else.

Once over this information barrier, Mac, PC and Arc systems can be compared more even-handedly, and the next pages take a look at price and performance issues, the flaws and undoubted merits of *Impression*, and offer a few hints on getting the most from *Impression* and *Ovation*.

The future

Desktop publishing is one of the applications that will be transformed by Acorn developments over the next few months. Photo CD will mean cheap access to quality colour scanning. The basics are clear: you take your photos with your 35mm camera, and for £10 or so, Kodak will put your pictures on a 'gold disc' – a form of CD. So no more photo albums: you view your holiday snaps on the family telly, which is wired to your CD-Rom player. What's less obvious is that using a colour picture in a DTP'd document will be as easy as pie, because you won't need a colour scanner, only a CD-Rom drive.

Photo CD images are 24-bit. Displaying 24-bit colour on screen is currently impossible, though the specification of the Vidc20 chip shows that a 24-bit display figures in Acorn's plan. But unless you aim to retouch images, having a 24-bit display isn't as important as storing and printing 24-bit images.

Current sprite files are limited to eight-bit (256 colours), and though dithering helps on screen, point re-sampling of the dithered image to print it just doesn't work (see page 27 last month). Allied to this is the problem of converting RGB colours such as those in standard sprites and Photo CD images to the CMYK colour model required for process colour printing.

There is another complication. Colour scan files are huge – up to 18Mb uncompressed, as Photo CD pictures are up to 3072 by 2048 pixels, with 24-bit colour. Other quality colour scan files have similar problems. This brings us to OPI. Open Press Interface is a standard 'automatic picture replacement' system aimed at getting round just such difficulties.

The principle of OPI is that you make up your page and import only a small version of the picture you want to use: the document stays a manageable size, but you can see enough on screen to visualise your completed page. When you print, the name of the picture is sent out instead of the low-resolution picture itself, and it's the job of the printer (or more likely a Postscript RIP) to pick up the name, then get hold of a matching high-res version, and print that.

Each high-res picture has to have a matching low-res screen preview version and on a Photo-CD there are five versions of each picture, from low to high res. It would be straightforward for OPI and



PhotoCDs stores four versions of each image in varying resolutions (the highest resolution is shown here). This ability is good news for OPI capability: you use the low res image, the printer uses the high res

Price to price

For home, or small office publishing systems, we looked at the price comparisons between the Acorn machines, the Apple Mac and the PC.

Acorn: Archimedes A5000 4/120 (£1600 with multiscan monitor). Add *Impression* (£125), *Artworks* (£125), fonts (£100), LaserDirect LBP-4 (£850). Total £2800. Plan on upgrading with a SCSI card, CD-Rom drive and flatbed scanner.

Apple: Macintosh LCIII 4/80 (£1150 with 14in monitor). Add extra RAM (£125), *Xpress* (£650), *Illustrator* (£400), fonts (£400), Laserwriter Select 300 (£700). Total £3425. Plan to upgrade with a CD-Rom drive and flatbed scanner.

PC: Compaq Prolinea 4/25s 4/120 LB (£1200 with VGA monitor). Add extra RAM (£125), PageMaker (£400), *CorelDraw!* (old version) (£135), fonts (£400), HP LaserJet 4L (£600). Total £2860. Plan on upgrading with SCSI card, CD-Rom drive and flatbed scanner.

Comment: This typical Acorn setup is well-balanced, and can certainly cope with the demands placed on it. The Apple system is extremely capable – it won't hold you back – but you're paying a lot for advanced software and you probably won't see the benefit. The performance of the printer in Mac and PC setups will be poor compared with the LaserDirect. A bargain basement PC outfit using a mail-order machine and shareware software could cost as little as £2200 without sacrificing much, but with no after-sales support.

Publishing: For a small publisher, the Acorn set-up would look something like this: add Eizo F550i monitor (£900) and colour card (£250). Four machines to share HP LaserJet 4M (£1500) with a printer sharer (£50). Fit one with an 8Mb upgrade, scanner, Revelation ImagePro and CD-Rom. Total £15,400.

Face to face: a Quark user talks to an Acorn user

In the publishing industry the Mac holds the fort, but are there any real advantages or is it just the product of habit? To find out we put a Mac user face to face with our resident DTP expert . . .

Q As a Mac user, I am impressed by the Arc. . . and I have to admit, the software is great value: *Impression* cost you £125 and Quark *Xpress* costs over £600. So if it costs five times as much, what can *Quark* do that *Impression* can't?

A Almost nothing – in this case, the real question is, What can *Quark* do *easily* that *Impression* can't?' The difference is that *Xpress* is fine-tuned for the professional page layout market. So it has some professional features, like a line grid and an off-page area.
The grid keeps text in adjacent columns aligned horizontally, even if the columns start at different heights up the page, and the off-page area allows full-bleed items to be set up easily. *Xpress'* typography is better: drop capitals can be done at the touch of a button, kerning and ligatures can happen automatically, and tracking can be built into your styles.
Text can be placed at an angle, so things like corner flashes are easy.
Graphics are better too: you can draw rules directly on the page, have frames that aren't rectangular, and text can be run around irregular objects like cutouts.

Q Okay. So what about *Impression*? How does it fare in terms of features?

A These things can be done. I use *Draw* to do things like rotated text. Irregular runarounds can only be done with lots of little frames – very time-consuming.
But items like tracking and auto-kerning, the line grid and a bleed area are in the version of *Impression* to be released at Acorn World.
Also, the word processing features of *Impression* are better than *Xpress*: you don't need to use a

Layout to layout: the Mac and the Archimedes

Clothes Show

The spread on the right laid out in *Quark* shows some of the features that are difficult in *Impression* – text running around pictures and on angled frames. You can make up this page but only with perseverance. The black bars with white text can be done as a thick paragraph rule off, with an offset to line it up with the text.


REGIONAL WINNER
THE GALLERIES, BRISTOL


HEAVEN SCENT

GIO WHIZ

MOON-WALKING

Get a grip, Mr Lagerfeld. If we really wanted to wear moon boots we certainly wouldn't buy them for £230 from Chanel (above)! Stick to what you do best – chichi suits and quilted handbags. Just leave the skiing outfits to Snow + Rock!

WHERE TO FIND...

BURGUNDY BELLE

SHADES OF AUTUMN

WHAT A WASTE...

Did you know there are about 14 million menstruating women in the UK. In 1989 we spent £150m on sanitary products. Think of all those clothes we could've bought with all that dosh!

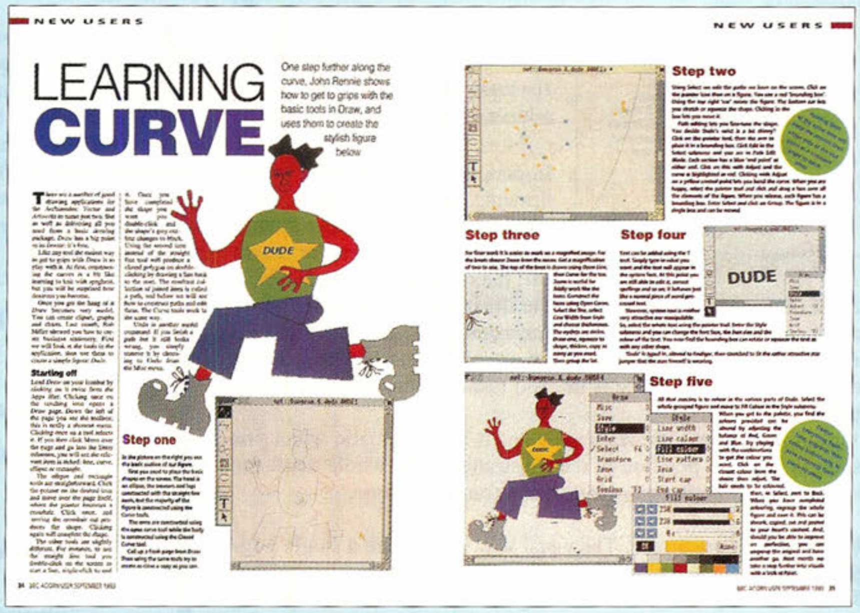
LOADSA TALENT

RAZOR-SHARP OFFER

NOSE-HOW

KRAZY FOR YOU

TOP THAT!


NEW USERS

LEARNING CURVE

One step further along the curve, John Rennie shows how to get to grips with the basic tools in Draw, and uses them to create the stylish figure below

Starting off

Step one

Step two

Step three

Step four

Step five

The page above however would not be much of a problem for *Impression* because none of the text is around the pictures. The angled frame can be outlined as a drawing, then imported and rotated in an oversized picture box.

Acorn User

Laid out using *Impression*, some of the difficulties on our Acorn User spread have been overcome. The runarounds are achieved using lots of small transparent frames to repel the main body text. The hints in circles have to be prepared as *Draw* files, then imported as a graphics.The headline is kerned, letter by letter.

separate word processor, so importing text with styles already in place is simpler.

On the other hand *Impression* has some features that *XPress* lacks. *Xpress* doesn't have a check-as-you-type spelling checker, mailmerging or abbreviation expansion. Nor can it compile an index or table of contents – *Impression* does this rather well, so it's better for books.

Impression's guide frames are better than *Xpress*' guide lines: you can position them exactly, for one thing. And *Impression*'s style sheets are more flexible too: they can be applied to individual words as well as whole paragraphs.

Things like a timed auto save and multiple views on the same document are useful too.

Q What about colour? Does *Impression* deal with colour in the same way as *Quark*?

A *Xpress* handles scanned colour with Tiff and EPS files, as well as mechanical colour like coloured text and tint boxes. Process colour separations for professional printing have been a problem area for *Impression*: the Business Supplement provides only a basic separation facility.

But the new version of Impression called *Publisher* handles 24-bit RGB and 32-bit CMYK colour, including Tiff and EPS files, and you can print out colour separations complete with trim and registration marks. You get full control of halftone screening angles and frequencies too, if you want it.

Although *Xpress* does have an edge, with Pantone colour as well as RGB and CMYK, *Impression* certainly seems to have caught up.

It's true that for now, bureau output is still a minor problem for Impression, Generally you have to output a Postscript file and send that to the bureau on a PC disc.

But there is a growing number of Archimedes-equipped bureaux and pre-press companies that can take your *Impression* files and deliver printed copies.

Q So would you claim that *Impression* is just as good as *Quark*?

A Almost but not quite. But for a lot of uses, the acknowledged advantages of *Xpress* in handling irregular runarounds and rotated text – which are almost the only ones – simply aren't worth five times the price.

Hints and tips

1 Text is sometimes flowed closely around the irregular edge of an illustration. This is not normally possible using *Impression*, as text is repelled by frames, not their contents – and all frames are rectangular. Ideally, there would be a polygonal frame type, as suggested in the screen shot. But the best workaround possible is still not good.





The lower picture shows how to achieve runarounds in Impression

Import the masked sprite or the drawing into a new frame. Now create a series of smaller frames to completely cover, or mask off, the illustration. The closer to the illustration's edge the frames are, the more accurate the final runaround will be. Once it's all carefully masked off, group all the small frames together. Bring the illustration frame to the front, and make it transparent and non-repelling.

Grouping all the little frames makes it less traumatic when you decide to alter the position of the illustration – the whole mask can be repositioned in one go rather than a frame at a time.

2 Drop caps are a pain. The usual way is to create a single large character in a frame of its own, make the frame transparent and non-repelling. Then, arrange a second, smaller, repelling frame, layered over the text but under the drop cap frame, to keep the body text away from the drop cap. Trouble is, the extra frames can't be embedded, so if you edit the text, you have to manually move the drop cap.

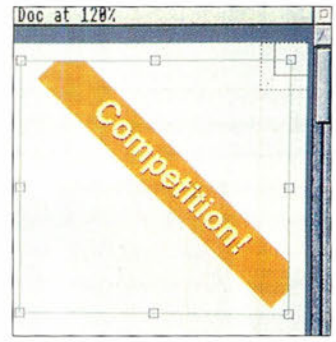
Try this instead. Create a text file as shown: call it DropCapT. Start a new *Impression* document and write a couple of paragraphs: it might help if the first began with a 'T', and the example works best with 12 on 14pt text. Now delete the initial T and drag in the DropCapT file. Almost there. Triple-click to highlight the first line, and apply the DropCapT style.

If your publication has a consistent style, and you always use drop caps of a certain size, then you could set up 26 little text files like this. For each letter, the left-margin and tab setup is different, and if you want three-line drop caps or use different size body copy, you can change the font-size value and the size of the upward kern.

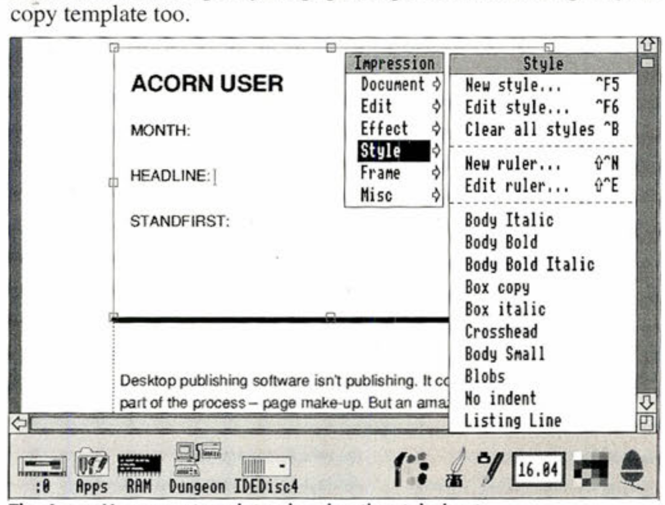
3 A bleed area is vital if you intend to print right up to the edge of the paper. If something goes exactly to the edge of the page, any inaccuracy in cutting the paper to size results in an embarassing white edge. So things intended to go to the edge should really go a couple of millimetres beyond.

So when you set up your master pages, make the whole thing 10mm wider and 20mm deeper (facing pages generally don't have bleed allowance on the inside edges). Put in a guide frame to show where the intended edge of the paper is, and position frames containing a *Draw* file to act as crop marks. You could also add squares of 25, 50, 75 and 100% black for the printer to check the dot gain.

4 A corner flash containing rotated text has to be prepared as a *Draw* file or *Artworks* illustration. If you plan to print via a printer driver that doesn't support rotated text (for example current LaserDirect and TurboDrivers) then the last thing you should do is turn the text into an outline. This isn't necessary if you're imaging using Postscript. When the illustration is placed on the page, make sure the edges of it carry well over into the bleed area, while the text doesn't go too near the edge of the real page (as marked by the guide frame and the pointer in the screenshot).



5 If you use *Impression* to wordprocess text before importing it onto your page, it can be a handy trick to set up a copy template. This is a normal wordprocessing document, perhaps laid out with a header for the article name and a single column of text. Leave a really big margin for the editor's disparaging scrawls. You probably use a set of stylesheets in your page layouts – perhaps Body, Body Italic, Body Bold and Crosshead are set up in your page templates. Set them up in your copy template too.



The Acorn User copy template, showing the stylesheet

The actual styles don't need to be the same, just have the same name. So in your copy template, Body Italic can be 14pt Homerton oblique, to make it easy to edit on screen, but in your page template Body Italic can be 8pt Trinity Italic. You can cut and paste text from your copy template onto your page layout, and the text will adopt the correct style.

6 If you have an A4 printer, then you can't print out anything larger. In fact, on most printers, you even lose another quarter inch or so around the edge of the paper. If you want to print a proof copy of your tabloid-size newspaper, or even something just a little larger than A4, then you can only reduce the output scale to say 90%, or 67% (for A3 size on A4 paper).

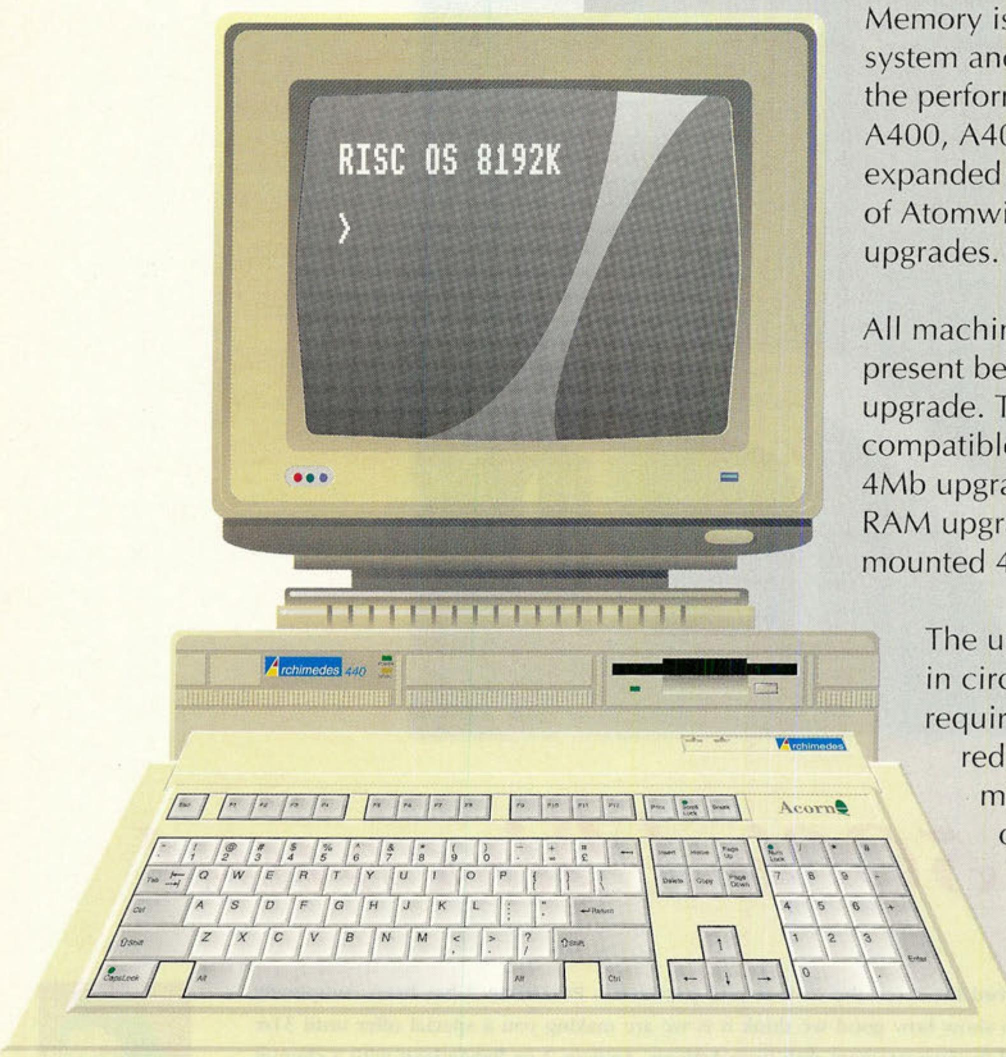
Alternatively, a utility called *QuickTile* from Desktop Projects arranges the output across a couple of separate pages. You can trim and stick them together to make up your page.

turning concept ...

A300

A400

For the past five years Atomwide have specialised in producing high-performance solutions for the entire range of Acorn 32-bit computers. From the first ARM3 board to the latest in SCSI technology, we have continued to deliver innovative products which complement the power of the Archimedes.



Memory is an important part of a computer system and increasing it will greatly enhance the performance of the machine. The A300, A400, A400/1 and A5000 can now all be expanded to a full 8Mb RAM by installing one of Atomwide's new range of memory upgrades.

All machines require 4Mb of RAM to be present before installing the new memory upgrade. The A300 series 8Mb upgrade is compatible with the Atomwide soldered-in 4Mb upgrade whilst the A5000 series 8Mb RAM upgrade will work with any vertically-mounted 4Mb plug-in card.

The upgrade consists of two small plug-in circuit boards so there is no soldering required. Compact design means that reduction in air-flow is kept to a minimum making sure that a low operating temperature is always maintained.

The design of all 8Mb upgrades means that you can fit large operating system ROMs (i.e. RISC OS 3) in your machine, without the need for a separate header board. Compatibility with all releases of the operating system is therefore ensured.

A400/1

A5000

... into reality

ATOMWIDE

7 The Metro Centre, Bridge Road,
Orpington, Kent. BR5 2BE
Tel 0689 838852 Fax 0689 896088
Email: sales@atomwide.co.uk

Let's get physical

So you think you have a mountain to climb publishing your own newsletter? Take a look at the publishing brief for the Journal of Physiology, says Jack Kreindler

The brief? Produce a monthly journal of 800 pages, heaving with scientific diagrams and customised fonts to emulate the historical originals. Impossible? Not with an Acorn.

JoP is a hardback, A5 monthly, containing nearly 800 pages of scientific material. Now this *is* a mammoth task. To put it in perspective, *Acorn User* averages 60 to 70 editorial pages per month. *JoP* makes your average Russian novel look like the back of a Cornflakes packet.

Add to this the fact that the features come in from a multitude of worldwide contributors in a myriad formats, that these pieces contain extraordinarily detailed diagrams and complex scientific terminology *and* the Society creates its own tailored fonts and you have a DTP task that would have the average production editor ripping his hair out. And the machine they chose to scale this peak is our own Acorn. The Acorn can do this? Just think the power the machine can bring to producing your own magazine.

The Journal

Cambridge University first published the *Journal of Physiology* in the 19th century, on behalf of the Physiological Society. The aim was to document the latest discoveries in the structure and function of biological systems. Today, under the banner of Cambridge University Press, the journal presents its international readership with scientific and medical research papers breaking new ground in all the fields encompassed by physiology. But the production of the journal has itself broken new ground... in the use of Acorn technology.

Only recently has the editing department of the Physiological Society (Cambridge University) taken its journal to the camera ready copy (CRC) stage, something previously done on the Macs 'downstairs' where the budgets are as big as national deficits.

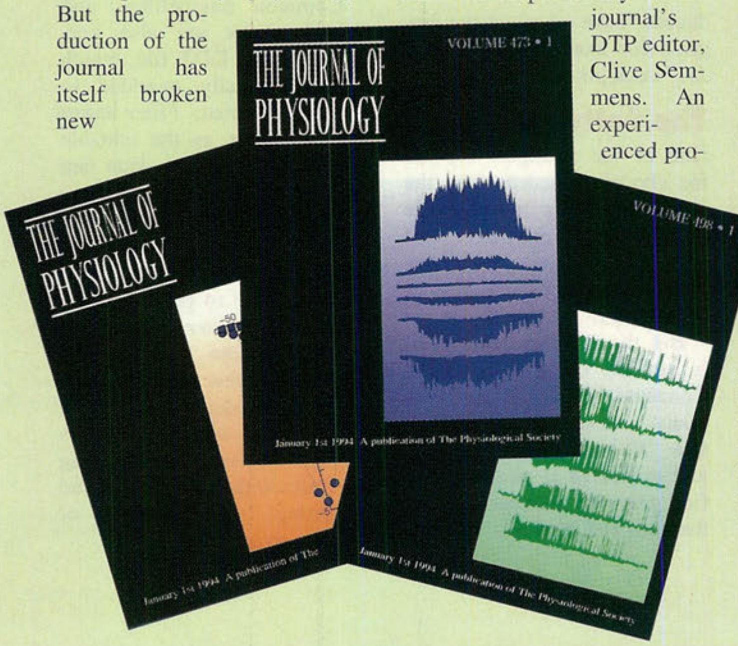
The hardware expenditure on the Acorns is a 'mere' £50,000 to date – a fraction of the cost of conventional professional systems. Cheap yes, but not nasty. The quality of copy is first class.



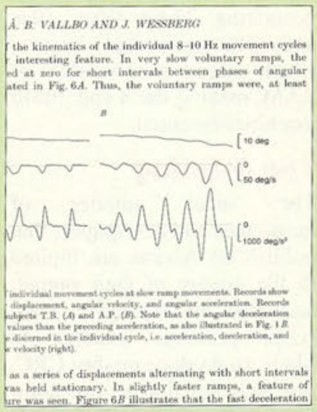
The Journal has a wealth of top-of-the-range hardware at its disposal

But why Acorns?

Moving towards Acorn has been the responsibility of the journal's DTP editor, Clive Semmens. An experienced programmer and font designer, Clive has revolutionised the operation both financially and in terms of efficiency.



He considers the Arm3-driven A5000s and A540s superior to any Quadra (Mac) or new i586 PC this side of £10,000, both design- and performance-wise. Nevertheless, he took a brief look at Macs and PCs. Other than processor power, the Acorn had two big things going for it. First the ease of producing fonts is unequalled. Secondly, any software inadequacies could be alleviated, without difficulty, thanks to the ease of programming Risc OS-compliant utilities. Also, DTP packages for the Arc, though not as numerous as on other platforms, are very powerful.


Å. B. VALLBO AND J. WESSBERG

the kinematics of the individual 8–10 Hz movement cycles interesting feature. In very slow voluntary ramps, the ed at zero for short intervals between phases of angular ated in Fig. 6*A*. Thus, the voluntary ramps were, at least

individual movement cycles at slow ramp movements. Records show displacement, angular velocity, and angular acceleration. Records subjects T.B. (*A*) and A.P. (*B*). Note that the angular deceleration values than the preceding acceleration, as also illustrated in Fig. 1*B* discerned in the individual cycle, i.e. acceleration, deceleration, and velocity (right).

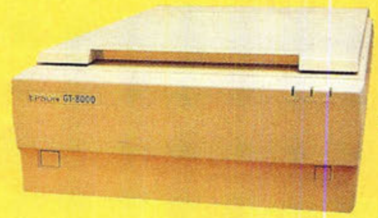
as a series of displacements alternating with short intervals was held stationary. In slightly faster ramps, a feature of ure was seen. Figure 6*B* illustrates that the fast deceleration

A section from the final pages

The Hardware

The Journal runs five A5000s, plus five A540s packing up to 16Mb of RAM. All of them have State Machine Graphics Cards and everyone is linked through an Ethernet. There are

THE DTP SETUP





From the scanners to the printers, we took a closer look at the journal's DTP line-up

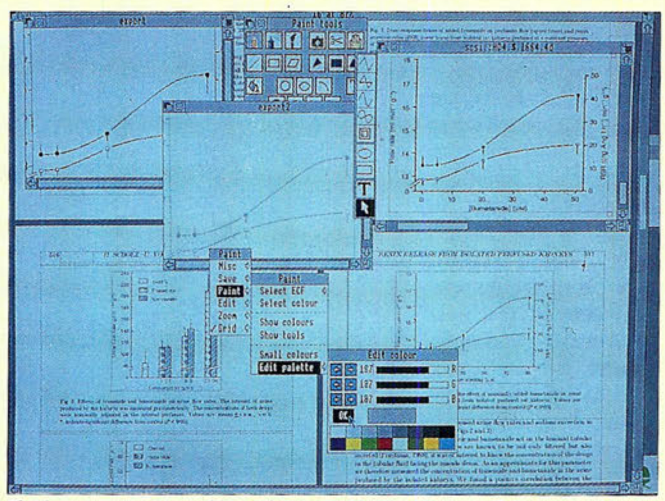
Scanning in illustrations is achieved using two flatbed scanners. The journal chose A4 flatbed scanners from DT Software, which can offer 1600 x 1600dpi maximum resolution and 24-bit colour scanning. Paint and Draw are used for image enhancement and Artworks for importing font-outlines and graphic files.

The Journal runs on A5000s with up to 8Mb Ram, and A540s with 12 or 16Mb Ram. They all have 120Mb hard drives and State Machine Graphics Cards and are linked into an Ethernet network with a 500Mb fileserver. The backups go onto a Syquest drive.

nine workstations altogether. For storage the fileserver holds half a gigabyte of uncompressed data on its SCSI drive. A Syquest removable hard disc system is used for archiving.

When all your working day is spent in front of a monitor, your eyes are put through an incredible amount of strain. Viewing your screen on large, very high resolution monitors is the only way of minimising the effects. Nine 20in Taxan, low-radiation monitors dominate the workspace, dwarfing the superb Sony and Eizo 17inchers also used. The huge screen resolutions are courtesy of State Machine.

Image inputting is managed by two flatbed GT 800 scanners (DT Software) capable of generating 24-bit Clear files and 256 greyscale sprites, which occupy massive slabs of RAM, making the 8 and 16Mb machines essential.



The images are scanned in and processed using Paint and Draw

‘Hardware expenditure is a mere £50,000: a fraction of the conventional cost’

The Printing

The small number of magazines and newspapers that publish on Acorns are limited in the quality of their output, and rely on expensive Postscript printing, usually via Macs, to produce quality CRC. *JoP* was the first to use nothing but the Acorn platform to produce its A3 CRC, impossible but for Calligraph.

Calligraph has used the *JoP* as a beta-test site for the development of its laser-direct A3 printers. Richard Piller, the brains behind Calligraph, used his direct-drive engineering to build a bridge between the *Journal*'s work on Acorns and the press camera. *JoP* is the only test site to operate two of the magnificent Calligraph TQ1200 lasers.

Just for the record, there are also two A4 notebooks, a Canon BJ300 bubble-jet, a lonely Mac II and an even more lonely PC. Yet, impressive as it now stands, this catalogue of hardware is growing all the time with the increasing number of production and editing staff.

Another office with workstations of similar specification should be fully functioning by October, when the entirety of the *Journal* will be Acorn-produced. Take a look at the diagram for exact details of the *JoP*'s equipment.

The Software

One of the strongest reasons for choosing Acorns was the ease of hacking into the file structures of programs and redesigning them to create their 'own user-friendly custom utilities'.

But the DTP software itself is straight off the Computer Concepts shelf. CC has won many awards for its *Impression II* publishing software, and so it came as no surprise to find not one iconbar without the quill and inkwell.

The State of the Art

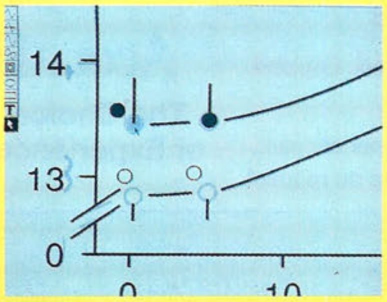
The *Journal* has been responsible for some pretty remarkable achievements in font design and DTP utilities and is a test bed for important desktop-printing developments. All the custom software has been designed and written, by the DTP editor. Below, we list the most important of these Risc OS-compliant utilities.

- *Filter* Drag any wordprocessor file onto the icon and, regardless of source program or computer format, an *Impression* DDT (Document Description Format file) will be created. *Filter* processes the WP/ASCII file in a multipass routine. First is identification, the second stage is source-specific structure processing. Thirdly, there are two source-specific independent sequence translations.

Common misspellings and Americanisms are also corrected in the DDT file, which is automatically moulded to the *JoP*'s format. *Filter* learns and improves as the editable search and replace lists are revised with increased knowledge of source formats.

The nearest equivalent to *Filter* on a Mac Quadra needs several hours to process a 16-page file; *Filter*, thanks to some hardcore ARM code, takes only a few seconds.

- *FinalF* does substitution tasks that are tedious in *Impression*, such as replacing ligatures with standard text and adjusting the position of accents over letters.



The journal uses its own filtering program to read in any text format. Design is carried out using Impression and a font that they designed themselves to cope with physiological symbols. For clear displays, much of the design takes place on Taxan 1095 low radiation, 20" monitors with multi-scanning Trinitron



Printers play an important role in the process as they produce the camera ready copy. The journal uses Calligraph TQ1200 A3 laser printers which normally work to a resolution of 600 x 600dpi. However, they have managed to manipulate this and thus produce a higher resolution of 1200 x 1200dpi.



Finally the output: a complete monthly book. When the entire journal moves over to Acorn production, this will be a staggering 800 pages per month. Future plans for the Journal of Physiology include the introduction of full-colour pages, magneto optical drives and much more. Watch this space. . .

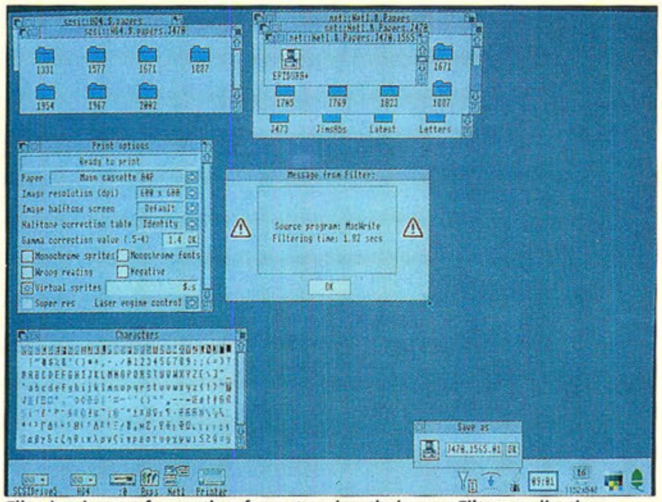
- *JoPKeys* redefines the keyboard so the myriad customised fonts can be accessed with key presses: Ca2+ x10-1 can be typed without using menus and leaving the keyboard.
- *ReDraw* converts the eight colours in *!Draw* objects filled with one of the eight set colours into hatched or crosshatched line shading. Similarly, turns line colours into dashed or dotted lines.

Custom fonts

The Physiological Society had to emulate the original style of the *Journal* to the finest degree. Typesetting and typefaces had to be meticulously studied so the transition from Mac to Acorn would be completely seamless. The result was the creation of 18 fonts under the family name of JoP Modern: bold, bold italic, inferior, inf ital, ital, raised inf, raised sup, raised inf ital, raised sup, raised sup ital, sans, sans oblique, sloping, sloping smallcaps, smallcaps, special, superior and superior ital – 637K in all.

All characters were scanned at 1600dpi, sent into *Draw* to be traced and, using *D-2-Font*, exported into *Font Editor*, to be fully scaffolded and so forth. For speed of text entry and editing, a custom keyboard and font layout was designed which translates key presses into greek peculiars, superiors, inferiors, assorted space sizes and ligatures, without selecting specific fonts.

But the proof of the success is in the results. How well have



Filtering in text from other formats using their own Filter application

‘Right now the journal is a showcase for the publishing industry not just Acorns’

they managed to copy the existing *Journal* style and how good was the final output quality from the Calligraph printers? After scouring the latest issue however, it was impossible to detect any differences between the parts still produced ‘downstairs’ on £¼m imagesetters, and the papers produced by the Physiological Society, on Acorns.

The direct-drive Calligraphs spit out A3 pages crammed with complex text plus graphics in around 35 seconds. This is faster, believe it or not, than an equivalent PostScript printer whacking out the same thing at half the resolution on A4. Richard Piller has managed to tweak the TQ1200's engine to produce twice its true resolution of 600dpi, in both axes, and is near to reaching the targets of 200-line halftoning (for four-colour separation) and 196 greyscales.

The printer driver has control over a large range of resolutions, halftoning and gamma correction and, astonishingly, desktop manipulation of laser power and toner transfer level.

These last two options mean that the journal can now look at printing straight on electrostatically insulating material such as Plazer. Plazer plates reduce the stray dippling of ink dots found when printing on paper and the sharpness of laser print can be increased considerably. Until now no one has managed to make such materials accept the toner used in laser printers.

Other interesting and useful features are the image manipulation facilities (including monochrome and negative printing options) enough to make most paint packages seem pretty inadequate.

Calligraph has developed its own system of OPI, called *Virtual Sprites*. Quarter sprites (of, yes, quarter resolution) appear in the frames usually filled by your memory-munching piccies.

The Future

From January 1994 *JoP* will be changed into a full-colour A4 paperback. The changes in format will be catered for by the continual growth of the *Journal*'s editorial kitchen.

Magneto-optical drives, printing onto Plazer from the TQ1200s, and the gradual phasing-in of Acorn's forthcoming Arm700-series machines are all strong possibilities for the near future. We may even see the *Journal* cooking up colour proofs on dye-sublimation printers.

The future promises much. Right now, the *JoP* is a showcase for the publishing business, and not just for Acorn. Because of its pioneering work and its low cost, it offers a signpost for the world of professional publishing.

Watford Electronics Ltd

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Archimedes micro

System	Basic	Colour	Multiscan
A3010-1Mb Family	£424	£625	£769
A3010-2Mb L/C	–	£680	–
A3020-2Mb FD	–	£749	£799
A3020-2Mb HD60	–	£899	£949
A4000-2Mb HD80	–	£949	£999
A4000-Home Office	–	£999	£1049
A4000 + 1Mb 386 PC Card		£1199	£1249
A4000 + 4Mb 486 PC Card		£1399	£1449
A5000-2Mb HD80	–	–	£1399
A5000-L/C 2Mb HD80	–	–	£1445
A5000-4Mb HD162	–	£1599	
A5000-2Mb ES	–	–	£1299
A5000-2Mb NS	–	–	£1399
Pocket Book	£212	–	–
Pocket Book Case	£2127	–	–
A4 Notebook – 2M RAM			£1399
A4 Notebook – 4M RAM/60M HD			£1699

3 SPECIAL PURCHASE OPTIONS

when you purchase any of the above Micros

10% of the value of the machine in hardware or software of your choice
OR
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OR
5% of the value of the machine in hardware or software PLUS 6 months Interest Free Credit

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- 5.25" 800K External Floppy Drive £85
- 5.25" 1.2Mb External Floppy Drive £89
- Acorn I/O Podule (Analogue/User/1MHz bus) £79
- I/O Podule (Analogue/User) £59
- MEMC 1A Upgrade £29
- MIDI add-on to Acorn I/O Podule £27
- MIDI Expansion Card £65
- Archi replacement mouse – New design £29
- PC Emulator £95
- Floating Point Unit £455
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- 4 Podule Backplane £25
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- SID Utilities Discs – Set of 4 £19
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- A5000 Dust Cover £9
- A5000 Technical Reference Manual £65
- A4 Spare Batteries £49
- IDE ROM Upgrade for use with RISC OS3 £16
- Scanlight 256 £188
- Scanlight Junior £180
- Scanlight II A4 £275
- Scanlight II Sheet Feeder £139
- Scanlight Professional £549
- CC Faxpack £255 • Colour Card £222
- Wild Vision Chroma Genlock £189
- Wild Vision Chroma 250 £338
- Wild Vision Chroma 350 £339
- Hawk V9 Mk 2 Standard £179
- Hawk V9 Mk 2 Dithered £245
- Pace Microlin Pocket Fax/Modem £175
- Spectra Colour Handscanner £539



Watford Electronics Headquaters – Luton

Scan256 Grey Scale Scanning

If you need a 256 grey-scale hand scanner for your Archimedes then look no further.
Scan256 gives you up to 256 levels of grey at a maximum of 400dpi and is supported by state-of-the-art sophisticated software – **for only £159**. This makes it the only sensible scanning and image processing solution for the Acorn 32-bit range. Just compare these features:

- More than one copy of the image held in memory at once.
- Allows multiple consecutive operations without saving the original to disk.
- Highly advanced dithering and image size reduction.
- Convolution digital filtering with over 100 filters gives high quality images from poor quality scans.
- Adjustable scale and size during scan.
- Supports State Machine G8 Graphics Card.
- Includes shearing and rotation.
- Saves images in industry standard formats: TIFF, Sprite and AIM.
- True brightness, contrast and gamma correction.
- Multiple options – scale to page, centre sideways selected area.
- Selectable scanning modes.
- Plus much much more . . .

Please specify Archimedes type, not compatible with A3010, A3020 and A400. **£159**
- Scan256 for A3000 Micro **£169**

RISC OS 3.1 Upgrades

- A5000 Software Upgrade Kit £22
- Software Upgrade Kit for the rest £39
- Hardware Upgrade Kit 300/440 £24
- Bulk (10) Software Upgrade Kit £309

Archimedes RAM Upgrades

All our memory upgrades are simple to fit. No soldering required. Fitting instructions supplied.

- **R300**-4 layer RAM upgraded board (Bare) £25
- **R302**-A3000 – to 2Mb RAM Upgrade £29
- **R303**-A3000 – to 2Mb RAM Upgrade (expandable to 4Mb) £49
- **R304**-A3000 – to 4Mb RAM Upgrade £99
- **R305**-A3010 – to 2Mb RAM Upgrade £39
- **R306**-A3020/A4000 – to 4Mb RAM Upgrade £70
- **R311**-A305 – to 1Mb RAM Upgrade £30
- **R312**-A305/310 – to 2Mb RAM Upgrade £85
- **R412**-A410/1 – to 2Mb RAM Upgrade £25
- **R413**-A420/1 – to 4Mb RAM Upgrade £50
- **R414**-A410/1 – to 4Mb RAM Upgrade £75
- **R810**-A410/1 – to 8Mb RAM Upgrade £32
- **R820**-A420/1 – to 8Mb RAM Upgrade £299
- **R840**-A440/1 – to 8Mb RAM Upgrade £239
- **A5000** – 2Mb to 4Mb additional RAM £82

Hi-Speed, Low Cost Archi Hard Disc Drive

Hardware
- Supports proposed ANSI ATA (IDE) specification
- Fast 16 bit MEMC interface interrupt driven to support background disc operations
- 5 Mbytes per second peak transfer rate
- Up to two drives (master and slave) per card
- Multiple cards per machine (up to four)

Software
- All software supplied in ROM
- Filing system 'IDEFS'
- Desktop filer with drive ready detection and disc name under icon
- !IDEForm, WIMP based configuration and formatting software
- Drives can be individually write protected
- Power saving standby modes supported with configuration timeout
- Drives can be used without translation in native mode for minimum overhead
- !IDEFSDisk, creates PC emulator hard disks.
- Password protection available

A300/A400 Internal Drive

Part No.	Capacity	Access Speed	Price
ADA 0520	44Mb	28mS	£159
ADA 0550	80Mb	17mS	£195
ADA 0530	105Mb	16mS	£235
ADA 0570	210Mb	15mS	£359
ADA 0880	330Mb	15mS	£465

All above 3.5" Drives are supplied complete with Controller Card & cable for use with A300/A400 /A500 series machines.

AAA 0300 External Case & PSU for A3000 £85
AEA 1060 Archi IDE Hard Disk Podule only £89

A5000 Internal IDE Drive

Can be used as 2nd Internal IDE Drive

ADA 1030	80Mb	17mS	£149
ADA 0940	105Mb	16mS	£189
ADA 0950	210Mb	15mS	£259
ADA 0580	330Mb	15mS	£399

A3000 External IDE Drives

ADA 0780	44Mb	28mS	£225
ADA 1020	80Mb	17mS	£265
ADA 1050	105Mb	15mS	£309
ADA 1070	210Mb	15mS	£399

New IDE ROM Software for RICS OS 3 (upgrade) for existing users **£16**

Internal Hard Disc Drives for A3000/A3010

State of the art, 4 layer internal IDE Hard Cards for the A3000. Software supplied in On-board ROM.

ADA 0770	30Mb	19mS	£159
ADA 0750	60Mb	18mS	£199
ADA 0720	80Mb	18mS	£219
ADA 0730	120Mb	16mS	£285

Supplied ready assembled. No soldering required. Simply plug into the allotted space.

Archi IDE Hard Cards

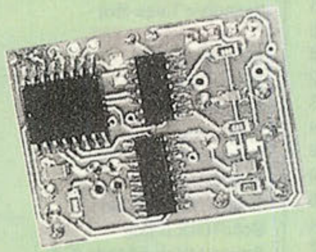
Ready to install, high performance hard cards for A300 & A400 series.

ADA 0800	30Mb	19mS	£189
ADA 0890	60Mb	19mS	£229
ADA 0670	80Mb	18mS	£249
ADA 0680	120Mb	16mS	£295

Acorn Multimedia

- Multimedia Expansion £485
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VIDC Enhancer

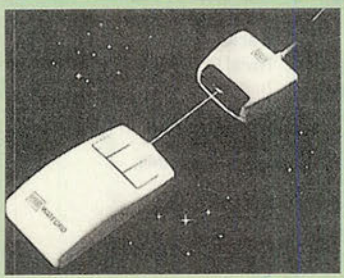


Our two unique VIDC add-on boards for the Archimedes cater for all VGA and Multiscan monitors and screen modes. The multimode software supplied provides all the new modes for the selected monitor type, including the now standard Computer Concepts modes. With VGA monitor, you are no longer restricted to a few modes. A Desk Top application supplied in disc, allows new modes to be designed and existing modes to be modified for particular monitors.

Super VGA VIDC Card: Its unique design allows the horizontal and vertical sync to be buffered and have the polarity changed under software control. **£35**

MultiVideo VIDC Card: As above, but for MultiScan monitors only. **£19**

Archi Cordless Mouse



Features: Infra Red Signal Transmission, High Resolution 200 DPI, High Tracking Speed of 600mm/s up, Anti-static Silicon Rubber Coated Ball, Low Friction Teflon Footpads, Power – by two AAA size batteries (not included), Automatic Standby Mode after 5 minutes inactive, Auto Power Shut-Down after 20 minutes inactive

Price: £29

Archi A4 Scanner



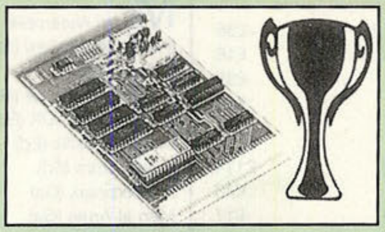
The 216mm scanning width can cope with both desktop scanning of single sheets, photographs, diagrams, etc with its fast ten page automatic document feeder, but it can also detach from the feeder to become a convenient hand-held full page scanner for larger documents or pictures. Scanned image control can be freely adjusted in increments of 10 dots per inch from 100 up to 400 dpi resolution with 64 levels of grey scaling. A built in shading controller and manual brightness control achieve optimum clarity. Unlike some scanners, which use a red light source, the Watford scanner uses a yellow/green source which vastly improves the light/dark contrasts, thus eliminating the effect where any red-based colours are faded down to white and so do not show up in the scanned image.

Archi A4 Scanner	£199
Sheet Feeder for Above	£75
Scanner + Sheet Feeder	£269

Spares for Archimedes

Archi Keyboard	£29	Cased Keyboard	£120
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A400 Floppy Drive	£59	Fan Filter	£6
A3000 Floppy Drive	£59	Keystrip	£5
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A3000 PSU	£49		

Archi Real-Time Digitiser



Now supplied with NEW RISC OSVersion Software

Watford's Archimedes Video Digitiser is the most sophisticated digitiser ever designed for a micro. It provides a fast and flexible means of capturing images from a video camera or recorder for display and manipulation on the Archimedes range of Micros. Off-air televisions may also be digitised via a video recorder or TV tuner. Please write for further details.

Price £75

A Set of Colour Filters for colour image grabbing using a video camera £16

Archi to BBC Serial Link Mk 2

Using this simple data link, it is possible to solve all your BBC to Archimedes data transfer problems. The kit is supplied with a disk, and the necessary cable to connect the two computers.

- RISC OS 2 Version **£15** • RISC OS 3 Version **£16**

(P.S. For A3000 Serial Upgrade **(£19)** required)

A3000 Accessories

- 3.5" External Drive **£95** • Monitor Stand **£15**
- Technical Manual **£32** • Serial Upgrade **£19**
- A3000 Dust Cover **£5** • Micro + Monitor cover **£9**
- Acorn Carrying Case for A3000 **£10**
- A3000 User Port/Midi Upgrade Card **£44**
- A3000 User/Analogue/IIC I/O Card **£38**
- A3000 External Podule Case **£15**

A3000 I/O Card (User, Analogue & IIC)

This NEW versatile I/O Card from Watford, fits inside the A3000 and includes an Analogue to Digital Converter, a User Port, and an InterIC (IIC) connector.

The card allows many of the peripherals developed for the BBC to be used with the Archimedes A3000. The ADC and User Port have the same pin out and connectors as the BBC computers.

Extensive RISC OS software is supplied to provide BBC OSBYTE calls for support of the ADC and User Ports, including the BASIC keyword ADVAL. The software provides extended RISC OS support for separate interrupts from both the ADC and User Ports, permitting easy interrupt driven operation.

The card is provided with all the software in ROM and is automatically loaded when the machine is turned on.

Peripherals connected to the ports can obtain up to 500mA of power at +5V. A fuse is fitted to the card to protect the A3000 from damage arising from accidental short circuit of the power output.

Features

- An 8 bit User Port with a standard 20 way IDC connector, compatible with the User Port on the BBC computers and the Archimedes I/O Podule.
- A 10 bit Analogue to Digital Converter with a standard 15 way D-type connector, compatible with the ADC on the BBC range of computers and the Archimedes I/O Podule.
- An InterIC (IIC) Port with a 5 pin DIN socket to connect the A3000 to external IIC devices **£38**

Cortian CKAI Interface

Eliminates need to have a User Port in A3000/305/310/400/540 when using Concept Keyboard **£28**

Concept Keyboards

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- A3 Standard Pack **£94** • Primary Pack **£99**
- Designer Pack A4 **£104** • A3 D Pack **£104**
- Universal 2010 Keyboard A3 **£107**
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With this interface it is possible to connect almost any 5.25"/3.5" disc drive with its own power supply to the Archimedes. Up to 4 disc drives can be connected. Fully Buffered Board. NO SOLDERING is involved. Supplied complete with necessary lead.

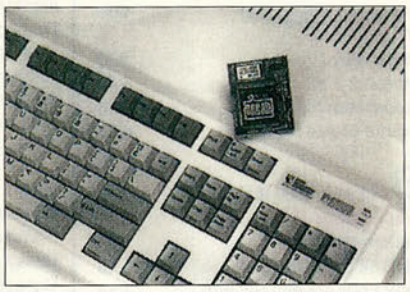
Price £21

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- A300/400 **£15**; • A3000 **£14**

ARM 3 Turbo Card Mk II

Simply The Best



Here it is at last – the all new Mark 2 version of Watford's highly acclaimed ARM 3 processor board for the Archimedes and now also the A3000 series computers. Using the latest surface mout technology on a high quality four layer circuit board we have reduced the overall size to a mere 53mm x 45mm, and the cost to only £145. Mk II upgrade will increase the speed of your micro by a factor of 3 to 6. Any competent A300 or A400/1 series micro owner can fit the upgrade himself, as we provide full fitting instructions and a special ARM chip extraction tool. However, for A3000 micros and those not wishing to perform the upgrade themselves, we will collect, upgrade and return your micro by courier service, at an additional cost of £24.
(A300 and old A440 series owners please note – you will need to upgrade to MEMC1A for ARM3 to work.)

RRP £249

Special Offer £125

Network Accessories/Software

BBC B Econet Kit	£42
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A3020/4000 Econet Module	£49
Acorn A4 Econet Module	£50
Archimedes Ethernet Card	£139
A3020/4000 Ethernet Card	£179
AUN/Level 4 Fileserver	£379
Econet Starter Kit	£137
100m Econet Cable	£99
Econet Socket Box	£7.50

(PS. Full range of Network Accessories /Software/Site Licences available. Telephone for details.)

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Archimedes Software

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10 out of 10 Early Essentials	£18
10 out of 10 English (Ed)	£18
10 out of 10 Maths (Ed)	£18
3D Construction Kit (Ga)	£25
Acorn DTP (De)	£49
Acorn Advance	£88
Air Supremacy (Ga)	£15
Ancestry (Mi)	£58
Animated Alphabet (Ed)	£21
An Eye for Spelling (Ed)	£31
Arcade 3 Compilation (Ga)	£12
ArcComm 2 (Mi)	£45
ArcLight (Gr)	£40
Arc-PCB (Mi)	£79
Arc-PCB Pro (Mi)	£169
Arc-PCB Schematics (Mi)	£229
ArcTeam 7 (Mi)	£58
ARCtist (Gr)	£18
ARCticulate (Mi)	£18
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Arcventure - The Egyptians	£29
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Battle Chess (Ga)	£20
Battletank (Ga)	£9
BBC DFS Reader (Mi)	£6
Best Four Adventures (Ed)	£34
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Blackangel (Ga)	£25
Bookbinder (Ed)	£43
Bookstore - Primary (Ed)	£35
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Easiword (Wo)	£43
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Graphbox (Gr)	£56
Graphbox Prof. (Gr)	£102
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Pipedream 4 (Wo)	£117
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Populous (Ga)	£21
Poster (Gr)	£74
PowerROUTER (Mi)	£125
Presenter GTI (Mi)	£65
Presenter Story (Mi)	£145
Primeword (Wo)	£50
Prophet Accounts (Mi)	£132
Prophet Demo Disc (Mi)	£10
ProArtisan (Gr)	£69
ProCad (Gr)	£390
PrimeArt (Gr)	£46
Pysanki (Ga)	£14
Quark (Ga)	£19
Quazar (Ga)	£10
Quest for Gold (Ga)	£15
Rainforest (Mi)	£17
Real McCoy 2 (Ga)	£21
Real McCoy 3 (Ga)	£22
Real McCoy 4 (Ga)	£22
Recall (Ed)	£36
Redshift (Ga)	£9
Render Bender 2 (Gr)	£77
Return to Doom (Ga)	£16
Repton 3 (Ga)	£18
Revelation 2 (Gr)	£74
Rhapsody 2 (Mi)	£44
Rhapsody 3 (Mi)	£78
RiscBasic Compiler (La)	£66
RiscForth Compiler (La)	£66
RoboLogo (La)	£38
Saloon Cars Deluxe (Ga)	£24
S-Base Personal	£79
S-Base Developer	£150
Schema (Sp)	£89
ScoreDraw (Mi)	£43
Selladore Tales (Ed)	£24
Shareholder Pro (Mi)	£129
Showpage (Gr)	£127
SigmaPlot (Gr)	£39
Sim City (Ga)	£22
Skyhunter	£22
Snippet (Ed)	£31
SolidCAD (Gr)	£65
SolidsRENDER (Gr)	£65
SolidTOOLS (Mi)	£169
Space Mission Mada (Ed)	£23
Speech! (Mi)	£15
Stig of the Dump (Ed)	£22
Stunt Racer 2000 (Ga)	£24
SuperDUMP (Mi)	£17
Superior Golf (Ga)	£13
SuperPLOT (Mi)	£17
Swiv (Ga)	£18
Talisman (Ga)	£8
Technodream (Ga)	£19
Time Tabler (Mi)	£499
Time Traveller (Ed)	£31
Titler (Gr)	£115
Toolkit Plus (Mi)	£35
Topographer (Mi)	£62
Touchtype (Mi)	£35
Tracker (Mi)	£37
Trivial Pursuit (Ga)	£22
Turbo Driver BJ10e (Mi)	£41
Tween (Gr)	£23
Twin World (Ga)	£14
Type Studio (Mi)	£38
UIM (Ga)	£23
Victorians (Ed)	£19
Viewpoints (Ed)	£33
Virtual Golf (Ga)	£24
VoxBox (Mi)	£45
White Magic 2 (Ga)	£15
Wimp Prog. Toolkit (Mi)	£16
Wizards Revenge (Ed)	£17
Wordz (Wo)	£85
World Maker (Ed)	£46
World Map Study (Ed)	£59
Worldscape (Ga)	£16
Worst Witch (Ed)	£21
X-Fire (Ga)	£19
Zelanites (Ga)	£14
Zool (Ga)	£19

KEY

(Gr)aphics	(Sp)readsheet
(Ga)me	(Da)tabase
(Ed)ucational	(In)tegrated Package
(Mi)scellaneous	(La)nguage
(Wo)rdprocessor	

HOW TO ORDER

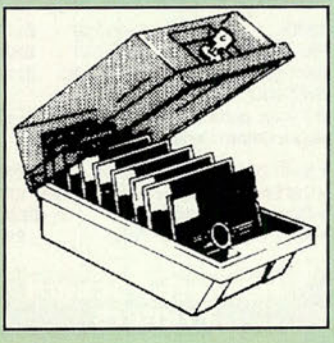
TELEPHONE (0582) 48 77 77

Archi Mk II Hand Scanner

Watford's Mk II hand scanner has a maximum resolution of 400dpi. The scanning width is 4". The sophisticated software is supplied in a 64K ROM, located on a standard single width expansion podule. As you scan a page, the image appears in the scanning window on the screen, scrolling up in real time. Other facilities include cropping and scaling to any size including stretching and squashing in X and Y directions separately. Colour tinting, X and Y flip, edge detection which turns solid objects into outlines. Images can be printed on any printer supported by RISC OS. On-screen help is provided via the RISC OS interactive help facility. (Please write in for full technical details).

AHS-4 Archi 300/400 Version	**£89**
AHS-3 Archi A3000 Version	**£99**

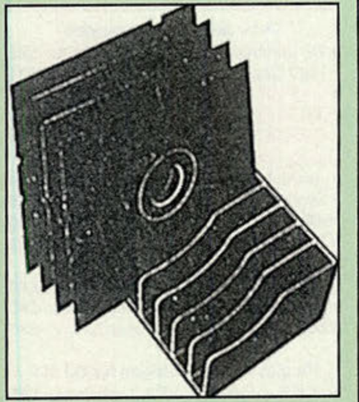
Antistatic Lockable Disc Storage Units



- **M35** – holds up to 50 5.25" discs **£4.95**
- **M85** – holds up to 95 5.25" discs **£6.95**
- **M25*** – holds up to 25 3.5" discs **£4.95**
- **M50** – holds up to 50 3.5" discs **£6.50**
- **M100** – holds 100 3.5" discs **£6.99**

*Not lockable

Disc Plonker Rack



When using ones micro, there is a tendancy to have more than one disc on the desk. This exposes them to the hazards of fingerprints, scratches, dust, coffee and an untidy desk. Why not protect your valuable data from all these hazards with the help of our extremely hardy and low cost DISC PLONKER RACK. Holds up to eight 5.25" discs. **£2**

3M – Diskettes

Lifetime warranty on 3M Discs

- *10 x 5.25" S/S D/D 40T (744)* *£5*
- *10 x 5.25" D/S D/D 40T (745)* *£5*
- *10 x 5.25" S/S D/D 80 Track (746)* *£6*
- *10 x 5.25" D/S D/D 80 Track (747)* *£7*
- *10 x 5.25" 1.6M D/S H/D for IBM* *£8*
- *10 x 3.5" S/S D/D 40/80 Track* *£6*
- *10 x 3.5"D/S D/D 40/80 Track* *£6*
- *10 x 3.5" D/S H/Density* *£10*

Top Quality Diskettes

Watford's lifetime guaranteed discs are supplied complete with self stick lables & plastic libary case.

- *10 x* ***M3*** *3.5" D/S D/D 80 Track* *£6*
- *10 x* ***M9*** *3.5" D/S High Density* *£10*
- *10 x* ***M4*** *5.25" S/S D/D 40 Track* *£5*
- *10 x* ***M5*** *5.25" D/S D/D 40 Track* *£5*
- *10 x* ***M7*** *5.25" D/S D/D 80 Track* *£6*
- *10 x* ***M8*** *5.25" D/S H/D Hi-Density* *£9*

Special Bulk Offer Discs

(Lifetime warranty on Discs)

BULK PACK DISCS in lots of 100

Type	S/S 40T	D/S 40T	D/S 80T
• With Sleeves 5.25"	£28	£33	£38
• 3.5" D/S D/D		£21 for 50 £39 for 100	
• 3.5" D/S H/D		£40 for 50 £75 for 100	

Disc Drive Power Leads

Supply from BBC power supply to standard Disc Drive Connection:

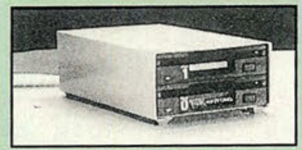
Single	£3.00
Dual	£3.75

Disc Drive Interface Leads

BBC to Disc Drives Ribbon Cable

Single	£4
Twin	£6

3.5" Disc Drives

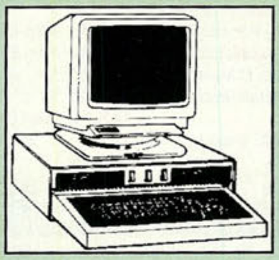


These top quality 3.5" Double Sided, 80 Track, are attractively finished in BBC beige. They are supplied complete with all cables and a Utilities Disc.

Type	Description	
	Disc Drive without PSU	
• **CLS35:**	Single Disc Drive, 400K	**£59**
• **CLD35:**	Twin Disc Drives, 800K	**£109**
	Disc Drive with PSU	
• **CS35:**	Single Disc Drive, 400K	**£82**
• **CD35:**	Twin Disc Drives, 800K	**£126**

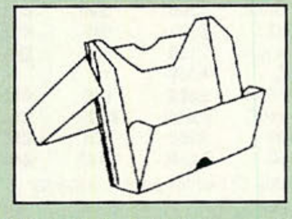
(PS. CS35 is supplied in a twin case with a blanking plate to enable expansion to a dual drive at a later stage.)

Disc Drives in Monitor Stand



- **CDPM 800S** – Twin 5.25", 800K Double sided 40/80 track switchable disc drives mounted in an attractively finished Beige colour plinth for the BBC B & Master 128K micros. Supplied complete with integral power supply, cables and Utilities disc. The mains switch with neon On/Off light indicator, and the two 40/80 track switches are mounted on the front panel for ease of use. **£139**
- **DP35 800** – Same as above except one disc drive is a 5.25" and the other is 3.5". **£135**

Plastic Library Cases



DLC1 – holds 5 x 3.5" Discs	**£1.50**
DLC2 – holds 10 x 3.5" Discs	**£1.90**
DLC3 – holds 5 x 5.25" Discs	**£1.60**
DLC4 – holds10 x 5.25" Discs	**£2.00**

Disc Albums

Attractively finished in leather-look PVC Vinyl

DW1 – holds 6 x 3.5" Discs	**£2.50**
DW2 – holds 6 x 5.25" Discs	**£3.00**
DW3 – holds 20 x 5.25" Discs	**£3.50**
DW4 – holds 40 x 3.5" or 5.25" Discs	**£4.50**

Cleaning Kits & Accessories

- 5.25" Disc Cleaning Kit **£4**
- 3.5" Disc Cleaning Kit **£4**
- PC Cleaning Kit **£7**
- Professional PC Cleaning Kit **£12**
- Aerosol Dust Spray Can **£3**
- Servisol Foam Cleaner Can **£3**
- Antistatic Aerosol Spray **£3**

Acorn & Watford DFSs

- Watford DFS Kit complete **£42.00**
- DFS Manual (comprehensive) **£6.95**
- Acorn DNFS ROM **£17.00**
- Acorn ADFS ROM only **£25.00**
- Acorn 1772 DFS ROM Kit **£42.00**
- Acorn DFS Kit complete **£42.00**

Watford's Mk II 1772

Single/Double Density DFS

Many of our customers have wanted to use our superior DDFS and Acorn ADFS together. Now our Mk II DDFS Board with its 1772 Disc Controller has been adapted to allow the use of Acorn ADFS as well. It also has all the commands of the Acorn's 1772 DFS, plus many more added features.

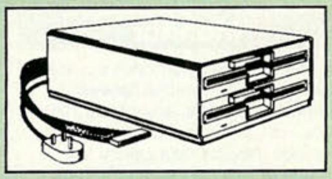
- Complete Kit **Special Price £39**
- DDFS Manual (No VAT) **£6.95**

Quality Disc Drives from Watford

All our Disc Drives are Double Sided and will operate in both Single and Double Density modes. All 5.25" Disc Drives are 40/80 track switchable. For ease of use, the switches are front mounted. Follow the trend with a Watford plinth. *(Turn to the 6th page of our advert for the Plinths).*
PS. All our 5.25" Disc Drives with PSU are compatible with the Compact Micro. All you require is our special Disc Drive cables designed by us.

"Test Bureau Approved for Use in Education"





Our Disc Drivers conform to BS415

Disc Drive without PSU

- **CLS400S:** Single. 40/80 track 400K Double sided Drive **£75**
- **CLD800S:** Twin, 40/80 track, 800K Double sided Drives **£138**

Disc Drive with PSU

- **CS400S:** Single, 40/80 track, 400K Double sided Drive **£85**
- **CD800S:** Twin, 40/80 track, 800K Double sided Drives **£149**

TEX EPROM ERASERS

TEX Eraser operates following the manufacturers specifications to give maximum possible working life to EPROMs by not erasing too fast. Erases up to 10 EPROMs. Has an automatic safety cut-off to switch off UV lamp when opened. **£34**

Spare UV Lamp **£12**

Credit Card Hotline 0582 745555

Continued → →

Microvitec Monitors

- **1451** – Medium Resoluation #£199
- **Cub3000** Medium Res for A3000 #£195
- Dust Cover for Microsvitecs £5.50
- **Touchtec 501 Touch Screen** £239
- **Touchtec 3000** (For RiscOs 2 only) £POA
- CubScan 1440 14" £389
- CubScan 1450 15" FST £POA

#3 years parts & labour warranty

MultiScan Monitors

Eizo T240i	£483	Pan TX1713MAB	£616
Eizo F340i-W	£625	Phil 4CM4270	£289
Eizo F550i-W	£899	Phil 7CM3279	£249
Phil 7CM5279	£269	Taxan 787	£229
NEC 2A-N	£274	Taxan 787LR	£239
NEC 3FG	£360	Taxan 789LR	£289
NEC 3FGe	£449	Taxan 795-PC	£465
NEC 4FGe	£479	Taxan 875+LR	£737
NEC 5FG	£899	Panasonic C1381	£199
NEC 5FGe	£789		

Panasonic monitors carry 2 years on-site maintenance warranty.

Aries AlphaScan Monitor

Its multiscan circuitry provides automatic adjustment for frequencies between 31 and 56KHz horizontal, and 43 and 70KHz vertical. Its 0.28mm dot pitch high resolution tube provides super sharp text graphics, while a high speed (70/72 Hz) refresh rate provides a flicker-free display easing the eye strain. The VIDC Adaptor supplied with the monitor allows high resolution operation in all screen modes. **£299**

- Aries Alphascan 17" Plus £585
- Aries 6000 15" Flat Screen, 0.28mm non-glare 1024 x 768 non-interlaced (70Hz) Microprocessor controlled £395
- Aries 7000 17" Flat Screen, 0.28mm non-glare. Maximum resolution 1280 x 1024 non-interlaced. Microprocessor controlled £625

Philips Monitors

- **BM7502** 12" Hi-res Green £88
- **CM8833ii** 14" med. res Colour. Ideal for BBC B; Master & Archimedes £192

Pace External Modems

All Pace modems are BABT Approved and include a 5-year Parts & Labour Warranty.

- Linnet Plus – Intelligent, V21/23 Auto Dial/Answer, Hayes Compatible £89
- Linnet 24 – Intelligent, V21/23, V22, V22bis, Auto Dial/Answer, Hayes Compatible £142
- Linnet Quad – Intelligent, V21/23, V22, V22bis, V42, MNP 4&5 Auto, Dial/Answer, Hayes Compatible £175
- Linnet 32 – V32, V22bis, V42bis, V42, MNP 4&5 £249
- Linnet 32+ – V32bis, V32, V22bis, V22, V32, V21, V42bis, V42, MNP 4&5 £299
- Ultralink Quad – V22bis, V22, V21, V23, V42bis, V42, MNP 4&5 Upgradable to Ultralink 32 Plus Spec. £199
- Ultralink 32+ – Intelligent, V32bis, V32, V22bis, V22, V21, V23, V42bis, V42, MNP 4&5 wire leased line with P.S.T.N. dial backup and auto restore £429

Archi Comm. Software

- Hearsay £69
- Arc Comm £45
- RS-232 Cable for above modems £9

Printer Leads

- BBC Centronics 4' **£5;** 6' **£6**
- Archi Parallel 2m **£5;** 5m **£9;** 10m **£13**
- PC Parallel 2m **£5;** 5m **£9;** 10m **£13**
- 25 pin D Male/Male 2m **£5;** 5m **£10**
- Centronics Double Ended 4' **£5;** 6' **£6** 5m**£10;** 10m **£14**
- RS232 Leads Various **£POA**

Integrex InkJet Printers

- Paper Roll for Integrex 132 £6.50
- BBC Screen Dump Software £10
- Colour Cartridge £23
- Black Cartridge £14
- 100 A4 OHP transparencies £55
- Colour Jet 2000 £599
- Betajet Ink Jet Printer £185
- Betajet Cut Sheet Feeder £43
- Integrex Colourjet Series 2 £335
- Auto Sheet Feeder for Series 2 £45

Star Printers

	Printer	CSF	Ribbon
LC15	£186	£135	£5
LC20	£102	£60	£4
LC100C	£117	£65	£9
LC24-15	£242	£135	£5
LC24-100	£142	£69	£5
LC24-20 Mk2	£170	£65	£5
LC24-200C	£205	£65	£12
LC200 C	£151	£65	£12
Star Jet SJ48	£169	£43	£16
SJ144C	£399	–	–
XB24-200C	£322	£80	£12
XB24-250C	£389#	£139	£12
ZA-200C	£258	£89	£12
ZA-250C	£324#	£139	£12

Includes 12 months on-site warranty

- Black Ribbons for Colour Printers £5
- Serial 8K I'face LC10/15/24/200 £52
- 32K Buffer LC/XB24-10; 15; 200 £52
- Star/Archi Colour Printer Driver £15

NEC Printers

	Printer	CSF	Ribbon
P22Q	£190	£59	£6
P32	£255	£59	£6
P62	£339	£79	£8
P72	£395	£115	£8
P90	£577	£115	£8

- Jetmate J400 **£169**; • Jetmate J800 **£249**

- Black Ribbons P20; P32 £6
- Ribbons P60/70/P90 Black £8; Colr £14
- P60/70 Colour Option Kit £59
- CSF for P20 **£59**; P60 **£89**; P70 **£89**

Panasonic Printers

	Printer	CSF	Ribbon
KX-P1123	£129	£49	£7
KX-P1170	£98	£59	£6
KX-P1624	£267	£126	£8
KX-P1654	£334#	£126	£8
KX-P1695	£270	£126	£6
KX-P2123M	£148	£69	£8
KX-P2124	£220	£89	£7
KX-P2180M	£128	£69	£7
KX-P2624	£272#	£126	£8
KX-P2023	£158	£155	£POA

FREE – Printer lead with every Panasonic printer listed above

Includes 12 months on-site warranty

- Dustcover for 80 column printer £6
- Serial Interface for above Printers £46
- Black Ribbons for P1081, 1180, 1124 £7
- Brown, Blue or Red Ribbons for KX-P1081/1592/1595/1695 £9 each
- 32K Buffer for above Printers £16

Colour Kit for KX-P2180; KX-P2123 and KX-P2124 £37

Laser Printers

All Laser Printers (excluding HP Lasers) include 12 months on-site maintenance

Brother HL4-PS Postscript	4ppm	£965
Brother HL6 – NEW –	6ppm	£427
Brother HL10-PS	10ppm	£1265
Brother HL10-DV	10ppm	£1016
Brother HL10-DPS	10ppm	£1435
Canon LBP4 LITE	4ppm	£478
Canon LBP4 + 1.5M RAM	4ppm	£639
Canon LBP-8 Plus IIR	8ppm	£1420
Canon LBP-8 IV 600DPI	8ppm	£932
Epson EPL-4300	4ppm	£520
Epson EPL-5000	6ppm	£439
Epson EPL-5200 – NEW –	6ppm	£525
Epson EPL-7500 PS	6ppm	£1135
HP Laserjet 4 ML	4ppm	£757
HP Laserjet 4	8ppm	£1049
HP Laserjet 4L – NEW –	4ppm	£459
HP Laserjet 4M PS	8ppm	£1369
HP Laserjet 4Si	16ppm	£2199
HP Laserjet 4Si MX 1200 DPI	16ppm	£3325
NEC Silentwriter S62P #PS	6ppm	£990
NEC Silentwriter S102	6ppm	£893
NEC Silentwriter2 290	8ppm	£1125
NEC Silentwriter 290P PS	8ppm	£1469
OKI OL400E	4ppm	£419
OKI OL410		£589
Panasonic KX-P4410	5ppm*	£445
Panasonic KX-P4430	5ppm*	£579
Panasonic KX-P4451 DB	11ppm*	£839
Panasonic KX-P4455 PS	11ppm*	£1249
Star LP-4 Post Script	4ppm	£759
Star LS-5	5ppm	£473
Star LS-5 EX (RISC Based)	5ppm	£595
Star LS-5 TT True Type + Mac	5ppm	£739
Star LP-8 III Postscript	8ppm	£1125

* 2 years on-site warranty

- HP Laserjet 4L 3 years on-site £100
- HP Laserjet 4Si 3 years on-site £505
- HP Laserjet 4/4M 3 years on-site £170

Laser Toners

Canon 2, 3 & 4	£52	EPL 71/7500	£117
KX-P4420/50i/55	£20	HP4/4M	£72
Canon LBP8-IV	£75	EPL 8100	£117
KX-P4420/30	£30	HP Laserjet 4L	£59
Canon 8/Star LP8	£59	Qume Crystal (3)	£84
NEC SWriter	£84	OKI OL400/800	£21
Epson GQ	£12	Star LP4	£52
HPII/D, III/D	£60	OKI OL400e	£17
EPL 40/41/4300	£55	Star LS5	£69
HP IIP, IIIP	£54	VM800 8K pages	£99

Laser RAM Upgrades

Type	1M	2M	4M
IIP; IIIP	£49	£80	£132
II & IID	£60	£96	£142
LJ4/4M	£69	£75	£1758M/£279
EPL4100	–	£120	– 512K/£52
KX4420/50i	£59	£89	£149
NEC S62/S102	£99	£180	–
Star LBP	£139	£275	–
Laserjet 4L	£75	–	–

Jetpage Postscript Cartridge

- HP IIP/IIIP **£225** • IID & III **£227**

Various Add-Ons

- Laserjet Appletalk Interface £135
- HP Adobe Postscript + Cartridge £359
- Pacific Page Postscript £259
- HP Premier Font Collection £28
- Laserjet Various Font C'tridges *from* £45
- HP Postscript Module for LJ4 £270
- Laserjet 4 Powered envelope feeder £199
- Jetdirect Ethernet Card for Laserjet IIISi/4/4Si £359
- 500 Sheet paper cassette (3rd Bin) £205
- HPIIP/IIP Lower Cassette Tray £115
- Canon LBP-4 Lower Cassette Tray £96
- Ozone Filter P4420 £9 • P4450/55 £20



HANDS-ON OPEN DAY

We are proud to announce that date of our forthcoming Hands-On Open day on Sunday 3rd October 1993, to be held at our High Tech HQ in Luton. This is the latest in a successful series of Open Days held by Watford attended by over 2,000 people.

Also, on Saturday 2nd, the day before the big Open Day, Watford will be holding a series of presentations on the Acorn Headstart scheme aimed at students interested in purchasing an Acorn machine. Please call to book.

For further information, contact Richard Overfield or Keith Archer on (0582) 48 77 77.

Citizen Printers

120D+	£94	Swift 200	£178
PN-48	£179	Swift 240	£200
Swift 90	£132	Swift 240C	£212
Swift 90C	£198		

2 years parts and labour warranty on all above Citizen Printers.

- Swift 24 Ribbons; Black £4; Colour £13
- Cut Sheet Feeder for 80 col. printers £75
- Citizen 120D Ribbons £3.50
- Archi Colour Printer Driver £15

Hewlett-Packard Printers

DJ500 Colour	£242	DeskJet 1200C	£1045
DeskJet 510	£199	DeskJet 1200C PS	£1452
DJ550 Colour	£399	Deskwriter 550C	£459
DJ Portable	£175	PaintJet XL300*	£1675
Deskwriter	£229	PaintJet XL300 PS	£2619
Deskwriter 500C	£349	Quiet Jet Plus	£299

* Includes 12 months on-site warranty

3 years on-site maintenance available as follows:

DeskJet & DeskWriter mono £55
DeskJet & DeskWriter colour £65

- PaintJet Cartridge Black **£17**; Colour **£27**
- DJ Portable CSF **£49**; Carrying Case **£49**

Hi-quality InkJet Paper A4 90gms 500 Sheets £9

Desk Jet 500 Accessories

- Ink Cartridges Black £16; Colour £23
- High Capacity Ink Cartridges Black £25
- Ink Refill Double Pack (JetFill) £10
- Ink Refill High Capacity (Jet Fill) £16
- DeskJet Turbo Driver £45 (only £39 when purchased with printer)
- Archi – DJ550 Colour Printer Driver £14
- Epson FX Emulation Cart. (500 mono) £45
- IBM Proprinter Emulation Cartridge £59
- Wordperfect Cartridge £89
- DJ 500 Dust Covers £6
- 636G 50 x Transparencies A4 £40
- 636J 50 x Glossy Paper A4 (also XL) £40
- 630Z 50 x Cut Sheet Paper A4 £15

Plug In Font Cartridges for DJ 500

22706B – Prestige, Elite, Line Draw £55
22706C – Letter Gothic & HP Line Draw £56
22707P – Proprint Emulation Cartridges £57

HP PaintJet/XL Accessories

- 630P 200 Z-Fold paper 8.5 x 11 £14
- 630Q 50 Transparencies 8.5 x 11 £39
- 630S 50 Transparencies A4 £40
- 630Y 200 Cut Sheets 8.5 x 11 £14
- 631Y 200 Cut Sheets A4 £18

Epson Printers

	Printer	CSF	Ribbon
FX870	£265	£39	£4
FX1170	£335	£69	£6
LQ100	£132	-	£4
LQ570+	£201	£39	£4
LQ870	£355	£47	£6
LQ1060	£585	£155	£6
LQ1070	£310	£69	£6
LQ500	£204	-	-
LQ1170	£434	£69	£6
LQ2550	£669	£360	£6
LX100	£114	-	£4
LX400	£92	£69	£4
LX850+	£134	£69	£4
LX1050	£203	£125	£6
SQ870	£419	£170	£23
SQ1170	£555	£155	£23
SQ2550	£669	-	£23
Stylus 800	£219	-	£10

Epson RS232 Interface

Standard £28; +8K Buffer £75
- LQ100 Tractor Feed £29
- FX850/LQ800/850 Tractor Feed £69
- FX/LQ1050 Tractor Feed £85
- LQ2500/2550 Tractor Feed £90
- Dust Covers for 80 col. printers £6
- Stylus 800 Transparencies (50) £35

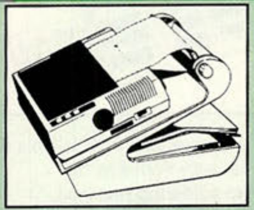
Canon Bubblejet Printers

	Printer	CSF	2nd Bin	Ink Cart
BJ10SX	£165	£43	-	£16
BJ200	£244	-	-	£16
BJ230	£280	-	-	£16
BJ300*	£305	£88	£88	£12
BJ330*	£369	£92	£79	£12
BJC800C	£1219	-	-	£16

- BJ10E/10EX/10SX/200/230 Jumbo Ink Refill Pack (Jetfill Twin Pack) £12
- Optional battery pack for BJ10EX/SX £33

* Includes12 months on-site warranty

Professional Printer Stand

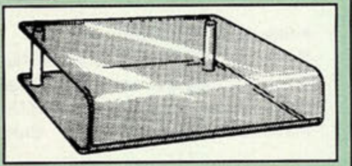


The professional printer stand takes hardly more space than your printer.
Due to the positioning of the paper feed and re-fold compartments, ie. one above the other, the desk space required for your printer functions is effectively halved. Its ergonomic design ensures smooth paper flow and automatic refolding.

80 Column version £16

132 Column version £25

Perspex Printer Stand



Give your computer system a touch of Class with our elegant smoke finished Perspex Printer Stand.

80 Column version £14
136 Column version £18

24 Hour Credit Card Order Line (0582) 74 55 55 / 48 77 77

Universal Printer Sharers

Connect up to 4 Micros to 1 Printer or 4 Printers to 1 Micro with our combined Share/Changer switch boxes.

Standard Low Cost Sharers

Connects	Serial	Parallel
• 2 to 1	£8	£9
• 3 to 1	£11	£12
• 4 to 1	£15	£16

Professional Sharer Units

Connects	Serial	Parallel
• 2 to 1	£12	£13
• 3 to 1	£15	£17
• 4 to 1	£24	£26

Auto Printer Sharer Switch

Connects	Serial	Centronics
• 2 to 1	£27	£29
• 4 to 1	£44	£45
• 8 to 1	-	£75

256K Multi Spooler

These Parallel Auto Printer Sharer Switches have built-in 256K Buffers.
- 2 In/2Out £99 • 4 In/2 Out £115
- 8 In/1 Out £149

(Cables for all printer switches are from £5 each. Please specify the type required when ordering).

Compact Converter Unit

Serial Parallel to Serial £32

Listing Paper

- 1,000 Sheets 9.5" x 11" Fanfold £7
- 2,000 Sheets 9.5" x 11" Fanfold £11
- 1,000 Sheets 9.5" x 11" NCR 2 Part Fanfold £21
- 1,000 Sheets 15" x 11" Fanfold £9
- 2,000 Sheets 15" x 11" Fanfold £16
- 1,000 Sheets true A4 Fanfold Paper 70gms £11
- 2,000 Sheets true A4 Fanfold Paper 70gms £21
- 500 Sheets A4 80gms Bond £3.50
- 500 Sheets A4 90gms Cartridge for Ink Jet/Laser printer £9

(All our Fanfold paper is Micor perforated leaving a smooth clean edge when the tractor feed strips are detatched).

Cross Over Manual Switch

2 In/2 Out Parallel £29
2 In/2 Out Serial £28
3 In/2 Out Serial £36

Compact Converter Unit

Type	Ribbons	Dust Covers
BBC B/BBC Master	-	£6
Archimedes Micro pair	-	£9
Citizen 120D	£3.25	£6
EX800/1000	£6	£6
RX/FX80/85/800/MX80	£2.95	-
FX/MX/RX100/1000	£3.95	-
Kaga/Taxan KP810/815	£6	£6
LQ400/500/550/800/850	£5.50	£6
LQ1050/LQ2500	£12	£6
LX400/800/850	£3.50	£6
M1009/GLP	£2.95	£6
NEC P2200	£4.50	£6

Dust covers for most 80 column printers available at £6 each.

Printer Labels

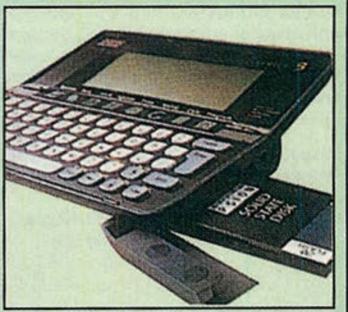
(On continuous Fanfold backing sheet)

1,000 90 x 36mm (Single Row) £4.50
1,000 90 x 36mm (Twin Row) £4.60
1,000 90 x 49mm (Twin Row) £4.95
1,000 102 x 36mm (Twin Row) £4.70

Laser Printer Labels on A4 Sheets

3750 – 70 x 29mm (3 Rows x 10) £15.50
2400 – 70 x 37mm (3 Rows x 8) £15.25

Psion Series III



- Series 3 Computer128K £108
- Series 3 Computer 256K £159
- **Desk Stand** £15

RAM Solid State Discs (SSD)
- 128K £48 • 512K £97 • 1Mb £199

Flash Solid State Disc (SSD)
- 128K £30 • 556K £48 • 512K £79 • 1mB £139 • 2Mb £199

Communications
- Parallel Interface Link £25
- RS 232 Serial Link for PC £58
- RS 232 Serial Link for Mac £59

Various
- Mains Adaptor 9V AC £12
- Spreadsheet £59
- Professional Finance £42
- Spelling Checker/Thesaurus £42

Commander Joystick

- Connects directly to BBC Analogue port
- Fully compatible with all BBC Joystick controlled games
- Switchable springs allow selection of floating or centering operation
- Trim adjusters for both X and Y axes for fine centre adjustment
- Convenient stick mounted fire button with additional base buttons.

Price: £15

Beeb PC (BASIC)

Designed to program authors to convert BBC programs to run on IBM PC's.

Price: £38

Beeb DOS

Allows IBM PCs/Compatibles to read Acorn format discs £39

WATFORD CATALOGUE

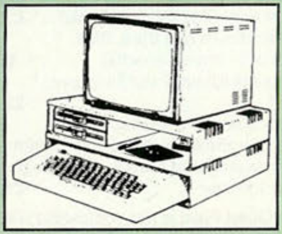
200 Pages Full Colour Catalogue/ Technical Guide now available.

Tel: (0582) 48 77 77 for your FREE copy

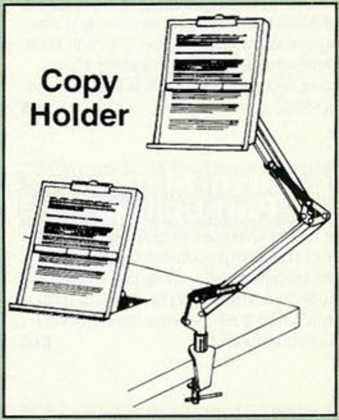
Plotters

- DXY1100 £650 • DXY1200 £835
- DXY1300 £1049 • Sketchmate A4 £349
- Sketchmate A3 £495
- Roland Plotter Fibre Tip Pens £7.50
- HP7440AU £665 • HP7475AU £899
- HP7570A £POA • HP7575AU £2529

Plinths for the BBC Master and A3000



- Single 490 x 310 x 105mm £14
- Double 490 x 310 x 210mm £27
- A3000 Single Plinth (very sturdy & precision made), has a slot on the left for the switch & cut out on the right for 3.5" Disc Drive £15



Available in 2 full A4 versions, desk resting and shelf clamping. Paper is held firmly by means of a plastic retaining ruler and a clip grip.
- Desk Top £8; • Angle Poise £12

NEW Copy holders as above but with a battery operated, remote controlled cursor/ruler. (By hand or foot pedal).
Batteries 2 x AA not included.
- Desk Top £15; • Angle Poise £20

Psion Series III

Fitted in place of your normal mains plug, this device protects your equipment (and data from corruption), against mains high voltage transient spikes/surges caused by lightning or thermostats switching.

Protection for only £8.50

Cross Over Manual Switch

4-way top quality mains trailing sockets. Supplied wired up with mains plug ready for use. Can be screwed to floor or wall if required. Very useful for tidying up all the mains leads from your peripherals. **£9.50**

Cross Over Manual Switch

A 4-way mains distribution unit as above with a built-in Surge Arrester, providing protection for your complete computer/Hi-Fi system. **£16**

Continued →

QUEST MOUSE Mk III

- Quest Mouse III & Quest Paint £39
- Quest Mouse III, Quest Paint, AMX Stop Press & Pagefont £59
- Quest Mouse III only £25
- Quest Paint Software only £23
- Quest Font Disc (22 Text Fonts) £15
- Quest Mouse Mat (Red, Blue or Green – please specify) £3
- Conquest (Quest Paint Extension) ROM £24
- Quest Colour Dump Disc – This new software allows you to print direct from Quest Print to your Integrex Colour Printer £18

(PS. Quest Paint is not compatible with BBC Compact)

Quest Paint is the winner of the BBC Acorn User 1990 Award for the Best Art/Graphics Software.

Mouse Cleaning Kit

To obtain trouble free operation and prolong the life of your mouse, the high tech rodent requires regular cleaning. Our deluxe mouse cleaning kit is ideal for the purpose. £3

Archi Mouse Port Splitter

Our handy little splitter unit eliminates the risk of damaging your micro due to constant plugging and unplugging of the mouse by allowing you to connect both a joystick and a mouse simultaneously to your Archimedes. £10

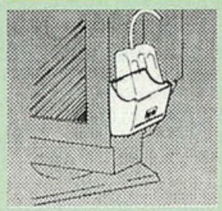
Mk III AMX MOUSE

- **AMX Mouse plus Super Art £39**

(Please specify for BBC,Master or Compact)

- AMX MOUSE ONLY £25
- AMX SUPERART Package £20
- AMX STOP PRESS – A Desktop publishing software. Works with keyboard, joystick or a mouse. £18
- PAGE FONTS – Over 20 Fonts for use with AMX Pagemaker £13
- AMX DESIGN (ROM) £23
- AMX EXTRA EXTRA £16
- MOUSE MAT £3

WE Mouse House



Treat your mouse to a cosy Mouse House. This handy little gadget solves the problem of where to store your mouse when it is having a rest. Made of sturdy plastic, the WE Mouse House attaches to the side of your computer, monitor, disc drive, etc.

Only £3

Award Winning Wapping Editor

The Wapping Editor from Watford Electronics represents a breakthrough in Desktop Publishing for the Beeb. The package includes a 64K ROM containing ALL the software needed to get into print fast: a very sophisticated graphics module, professional quality typesetting software, a word processor, a comprehensive font editor for designing your own typefaces, and a variety of printer dumps. This mouse-driven system is designed for the BBC B, the B+ and Master computers and will take full advantage of any Sideways and Shadow RAM that may be fitted. It will run under DFS, ADFS and Network filling systems and requires as a minimum just a single 40 track drive.

Wapping Editor Software Pack £39
Wapping Editor plus Mouse £59

(Wapping Editor only works with Master Compact if a Mertec Expansion box is fitted).

Wapping Art Disc

Over 250K of clip art to cut and paste into your Wapping Editor pages. Pictures include maps, transport, people, media, sport, games, etc. Two 'ratio' screens for use with hi-res and rotated A5 pages to ensure images are not distorted when printed out. **£15**

Wapping Font Disc 1

Sixteen additional fonts, including smaller version of Oberon and Daisy and two new sizes of the standard font for the Wapping Editor. Also included are two Mode O screens containing giant 'headline' fonts to cut and paste to create extra smooth headlines. Supplied complete with instructions. **£12**

Wapping Font Disc 2

This new addition to our Wapping range of DTP software provides you with additional 23 fonts for the Wapping Editor DTP pack. (80 track discs only). **£13**

32K Shadow Ram Expansion Card

A MUST FOR WORD PROCESSING

Simply plug the ribbon cable plug into the 6502 socket and gain a massive 32K of extra RAM.

- "VIEW" Wordprocessor users can now type in letters in 80 columns and have up to 28K bytes free – 5 times as much as normal.

- In WORDWISE (or WORDWISE PLUS), preview in 80 columns with the full 24K of text memory. This product is recommended as an ideal complement by Computer Concepts.

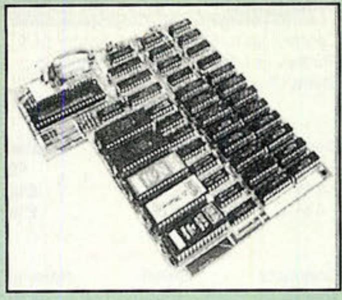
Only £45

ROM Cartridges for the BBC Master

Will accept the larger Piggy Back ROMs like Interword, Quest, etc.

• Twin £9; • Quad £14

ROM/RAM Card



- No soldering required to fit the board
- Compatible with BBC B
- Total number of ROMs increased from 4 to 8
- Up to 8 banks of sideways RAM (dynamic)

PRICES

- ROM/RAM Card with 32K DRAM £39
- ROM/RAM card with 64K DRAM £52
- ROM/RAM card with 128K DRAM £83

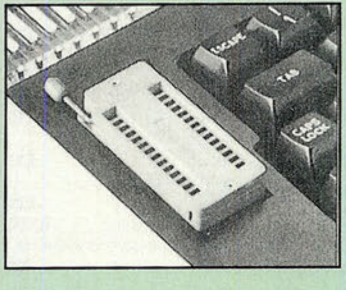
OPTIONAL EXTRAS

- 16K plug-in Static RAM kit £8
- 16K DRAM for Upgrade £13
- Battery backup £3
- Read and Write protect switches £2 each

Complete ROM-RAM card with all options fitted £99

24 Hour Credit Card Order Line dial (0582) 74 55 55

Sideways ROM ZIF Socket System



Allows you to change your ROMs quickly and efficiently, without having to open the lid. The ZIF socket is located into the ROM Cartridge's position. It is very simple to install. No soldering required. Also included in the price is a see-through storage case with antistatic lining, which allows you to store 12 ROMS. **£18**

User Port Splitter Unit

Gone are the days when you had to plug and unplug devices from the User Port. This extremely usefull little device allows you to connect two devices simultaneously to the BBC B & Master User Port.

Excellent Value at £22

Acorn Speech Synthesizer package complete for the BBC B Microcomputer

Special Offer £6

ACORN to PC

Stop the Confusion!

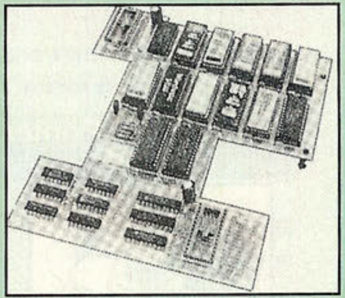
Do you have to use both Acorn computers and PC's? Would you like to use your Archimedes or A3000 in PC-emulation mode but are unsure of the new commands?

Although Acorn machines (such as the BBC B, the Master, the Archimedes) are mainly used in education, most commercial computers use other operating systems, particularly MS-DOS. As a result, school computer users are at a disadvantage when moving into 'business' computing. PC's and other commercial computers use MS-DOS as the operating system, so commands for formatting, copying, backing up, printing and the modem are not the same. Even file names are written differently! And did you know that there is one Acorn command which, if used in MS-DOS, wipes everything in the current directory?

'ACORN TO PC' enables you to change over painlessly. It shows clearly and quickly how, why and where the two systems (Acorn and MS–DOS) differ. As with a foreign language dictionary, you can use the book to transfer either way – from Acorn to MS-DOS, or from MS-DOS to Acorn.

Price: £6.95 (No VAT)

Solderless Sideways ROM Socket Board



- Increases your BBC Micro's ROM capacity from 4 to 16.
- **No soldering required.**
- Socket 14 takes two 6264 RAM chips.
- Read protect to make RAM "Vanish" allows recovery from ROM crashes.
- Battery backup option for RAM chips.
- Supplied ready to fit with comprehensive instructions.

Price: Only £32

Battery Backup fitted £35
Battery Backup only £3
16K Sideways RAM £8

- Sideways RAM Utilities Disc for Solderless ROM Board. Includes the options to load and save ROM Images and the facility to use Sideways RAM as Printer Buffer. **Only £8**

Convert two single Disc Drives into one

Watford DATA DUCK

Dual Drive with this simple external unit (suitable for Disc Drives with PSU. For Disc Drives without PSU, you will also require Watford Power Duck, see below). **£14**

Watford POWER DUCK £8

BBC Micro Education Software

• A Vous La France – French programmes for beginners	£29
• Au Restaurante/Accident du route – French games 12 yrs +	£26
• Bologne & Oh Les – French programmes for beginners	£26
• Computer Control – Program Simulating Computer Control	£26
• Computers at Work – Primary Education Program	£17
• Espana Viva – Spanish Educational Games for all ages	£20
• Folk Tales – Listening & Reading for ages 7+	£22
• Geordie Racer – Look and read for ages 7 +	£22
• Hall of Mirrors – Practice word and number skills	£22
• Letters and Pictures – Educational programs for ages 6-8 years	£15
• Make a Wildlife Garden – Explore Wildlife/Weather/ Garden Growth	£22
• Maths with a Story 1 – Primary level maths programs	£20
• Maths with a Story 2 – 4 further maths programs	£20
• Puncman 1 & 2 – Learning Punctuation for 7-13 years	£15
• Puncman 3 & 4 – Learning Punctuation for 8-14 years	£15
• Puncman 5, 6 & 7 – Learning Punctuation for 8-15 years	£15
FunSchool 3 (Under 5)	£17
FunSchool 3 (5-7 years)	£17
FunSchool 3 (Over 7)	£17

BBC Assorted ROMS

Acorn ADFS	£25
Acorn Basic 2	£22
Acorn DNFS	£17
Acorn OS B+	£25
Acorn OS 1.2	£14
Beebmon	£22
Logotron Logo	£43
Master OS ROM	£38
Numerator	£39
Pendown ROM	£32
TED-Teletext Editor	£15
View 3.0	£45
Viewsheet	£36
Viewstore	£36
Viewspell Disc	£25
Interbase	£49
Interchart	£25
Intersheet	£37
Interword	£36
MEGA3 –Interword, Intersheet and Interchart	£76
Spell Master	£42
View Printer Driver ROM	£29
Wordwise Plus/Wordaid	£38
Wordaid	£24

BeebDOS

Allows IBM Compatibles to read BBC and Archimedes format discs. **£39**

Beeb PC Basic

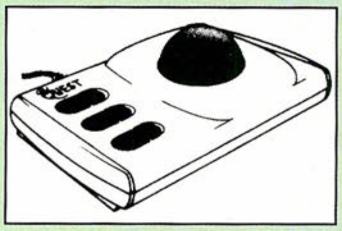
A version of BBC Basic for IBM compatible machines. **£38**

Spares for the BBC Micro

UHF Modulator	£4
Speaker & Speaker Grill	£5
Keyswitches	£1.50
16Mhz Crystal	£2
32.768Mhz Crystal	£2
17 way Keyboard Conn.	£4
Master Power Supply	£69
Master Keyboard	£62
MAster Casing	£49
BBC B Casing	£13
Perspex Keystrip Holder	£3
BBC B Keyboard	£35
BBC B Power Supply	£49
Master ULA CF30047	£15
Master ULA CF30060	£10
Serial ULA	£13
Video ULA	£14

Quest Tracer Ball

An attractively finished, extremely reliable mouse replacement input device. Requires very little space. Connects directly to your BBC, Master or Archimedes Micro.



AAA0120 – Archimedes	£26
BEA0240 – BBC Version	£25

BOOKS (No VAT on Books)

15 Hr Wordprocessing BBC/View	£6.95
15 Hr Wordprocessing BBC/WW & WW+	£6.95
30 Hour BASIC (BBC Micro)	£12.95
1st Word Plus – Mastering	£13.95
1st Word Plus Rel.2 Manual	£10.00
A3000 Technical Reference Manual	£29.00
A5000 Technical Reference Manual	£65.00
Acorn DTP A Guide To	£17.00
Advanced User Guide for BBC	£10.95
Archimedes 1st Step – Beginners Guide	£9.95
Archimedes Assembly Language	£14.95
Archimedes Basic V Guide	£9.95
Archimedes BBC Basic Guide	£20.00
Archimedes DTP Manual	£10.00
Archimedes Game Maker Manual	£14.95
Archimedes Operating System	£14.95
Archimedes RISC-OS Programmers Reference Manual	£79.00
Assembly Language Quick Ref.	£21.95
BBC B Micro User Guide	£15.00
Budget DTP on the Archimedes	£12.95
C Big Red Book of	£8.95
C Dabhand Guide to 3rd Ed	£16.95
C Programming Lang. 2nd Edition	£24.95
DISC FILING SYSTEM (DFS) Operating Manual for BBC	£5.95
DTP on the Archimedes	£12.95
Epson RX/FX Printer Commands Revealed	£5.95
File Handling for All	£9.95
FORTH on the BBC Micro	£9.95
Graphics on the ARM	£14.95
Impression – Dab Hand Guide	£14.95
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Master Operating System	£12.95
Master Reference Manual – Advanced	£10.00
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Example Programs on Disc for above	£4.95
Mysteries of Disc Drives & DFS Revealed	£4.95
PASCAL Programming	£10.95
RISC OS Style Guide	£9.95
RISC Technical Manual 260pg	£14.95
Understanding Interword – A Beginners Guide	£4.95
View 3.0 User Guide	£10.00
Viewsheet User Guide	£10.00
Viewstore User Guide	£10.00
Wimp Programming for All	£12.95
Wimp Programming – A Beginner's Guide	£12.95

• Official orders accepted from government, educational establishments and PLCs.
• Shop Hours: 9am to 6pm, Monday to Saturday. Late night Thursday until 8pm. Free customer car park.
• Mail Order Inquiries: 9am to 6pm. Monday to Friday only.
• Technical Inquiries: 9.30am to 5.00pm, Monday to Friday.

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	1st Item	2nd & Subsequent Item
Software	£6.00	£2.00
Hardware	£7.00	£5.00
Lasers	£9.00	£7.00
Accessories	£5.00	£2.00
Small Items	£4.00	£2.00

PS. Many software packages qualify for the small item tariff.

For Next Day Working Day Delivery Service, simply double the cost. All charges subject to VAT.

Above carriage charges apply to UK mainland only. On export orders, carriage is charged at cost.

Watford Electronics Ltd

Established 1972

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Tel: 0582 48 77 77 Tlx: 8956095 WATFRD Fax: 0582 488588

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QUALITY & SPEED

The BJ-200 and BJ-230 are the latest black and white printers from Canon, the market leaders in bubblejet technology.

The BJ-230 is an A3 version of the popular BJ-200. Both printers come with a built-in 80 page sheet feeder and power supply. With a print density of 360dpi the print quality of both these printers is hard to distinguish from a laser printer and better than any other competing black and white inkjet printers. A sample A4 print out is available on request so you can make the comparison. And like all inkjet printers they are whisper quiet and both easy and cheap to maintain.

Both printers are supplied with Computer Concepts' super-fast TurboDriver printer drivers - printing and returning control on average between three and ten times faster than the standard Acorn drivers or the Ace PROdrivers. The RISC OS 3 versions of the TurboDriver also support rotated text and sprite printing, multiple printer icons on the icon bar and full PostScript style control over halftone screen density, screen angle and screen type. They can also handle 24 bit CMYK colour separation and so colour prints can be obtained by using colour inks and passing the paper through four times.

RISC OS 3 **Turbo** DRIVERS

We are so confident about these printers that we will guarantee that this combination of TurboDriver and BJ-200 or BJ-230 is the fastest, highest quality printer available for less than a laser printer, or your money back.

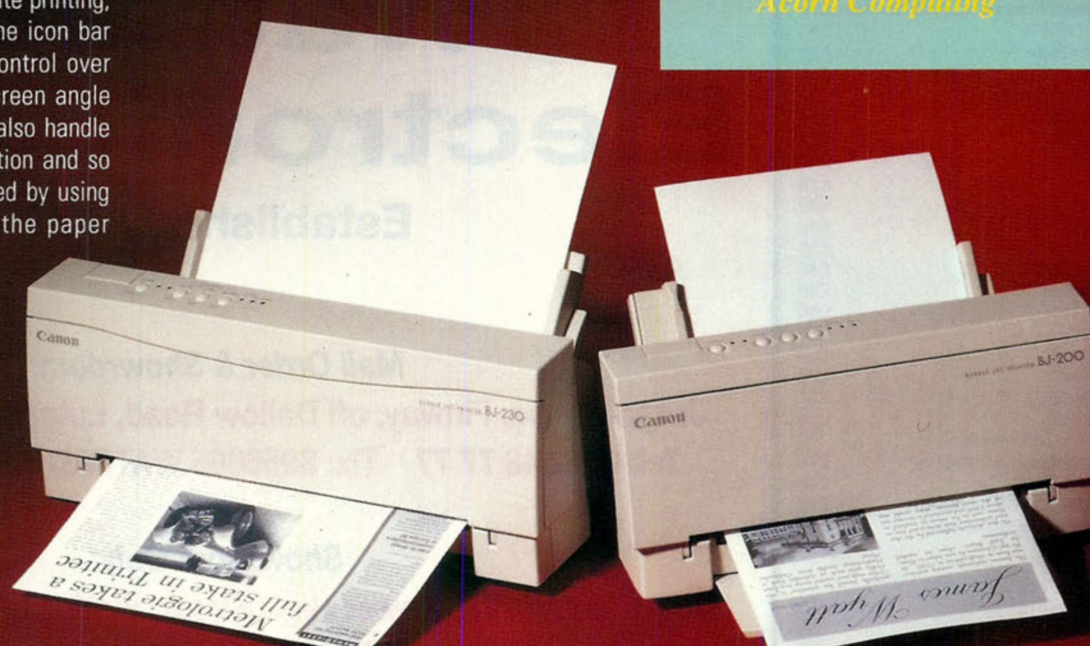
Price:
BJ-200 £275.00 + £10.00 p&p + VAT (£334.87 incl.)
BJ-230 £319.00 + £10.00 p&p + VAT (£386.57 incl.)

The package includes the BJ-200 or BJ-230 printer with TurboDriver software, a cable, sample A4 sheets of special high quality inkjet paper.

THE REVIEWER'S OPINION

" This is probably the best inkjet printer yet. ..whether used on its own or with the excellent TurboDriver, the BJ-200 is a fast printer and the print quality is simply superb. A winner."
Acorn User

" The TurboDriver excels at its task of providing quick, high quality output.."
".. In my opinion it is well worth the money and will more than pay for itself in terms of better productivity."
Acorn Computing



NEW A3 MODEL
NEW LOW PRICE

NB: The BJ-230 is only suitable for use with RISC OS 3.1. The BJ-200 can be used with both but please specify which will be used at the time of purchase. Suitable for all models of Archimedes, but a minimum of 2 Mbytes of RAM is required.

Computer Concepts Ltd

Gaddesden Place Hemel Hempstead Herts HP2 6EX

ORDER HOTLINE FOR IMMEDIATE DESPATCH: TELEPHONE 0442 63933 or FAX 0442 231632

SHOWING OFF

With the launch of PhotoCD, two new versions of Impression and an improved Acorn DIY Replay, the show promises to be a look into the future

First some advice. Before you turn up at the Acorn World show in October, make sure you grab your camera and shoot off a roll of Kodak film. Bring the undeveloped Kodak film to the show, and you can be one of the first Acorn owners to see your pictures on CD-Rom.

If you want to get your own film developed, Kodak will take any of its own 35mm film at the show and send you negatives, prints and a CD-Rom within two weeks.

Photo CD will be launched at the show. But unlike the normal PhotoCD procedure where the film is sent away to be put onto CD-Rom, at Acorn World you can see this happen on the spot.



Acorn gear up for the show: here's an early concept of how its stand will look . . .

To process the film, a PhotoCD Imaging Workstation will be at the show, equipped with powerful scanners to scan in the developed film. For a complete review of Photo CD, see next month's issue of *Acorn User*. The main Acorn stand, shown above, will have a product area and a preview area. The first will show off the Acorn product range, whereas the latter will give a taster of what to expect over the next few months in networking and multimedia. Meanwhile, over in the technical clinic some pressing problems can be aired.



Bring a 35mm film to the show to see your shots made up into PhotoCD format

Technical Clinic

Acorn's clinic should prove to be the technical equivalent of Marjorie Proops – someone to listen while you pour out your peripheral problems, or discuss the pros and cons of different debugging techniques. With the collected brainpower of Acorn's technical department, no problem should escape unsolved.

'We will deal with a whole range of queries, from knowing what printer to buy, to which SWI call to use,' David Bell, support group manager told us. Brave comment. To handle the onslaught, Acorn has put together a team of specialists shown overleaf. The inevitable printer query can be handled by Peter Dunn, check out Neil Kelleher for advice on the Risc OS operating system, or talk to Garry Neale, Acorn's training manager for advice on courses. They, and several other Acorn staff will be making an appearance at the show.

For the complete guide to all the show exhibitors, the final theatre schedule and some fantastic competition details don't miss next month's Acorn User. As sponsors of the show we will have the complete Acorn World supplement: packed full of show launches

Of course one of the major areas the team expects to cover is technical queries on Acorn products and information on Acorn upgrades. But they will also offer advice on a whole range of other issues: what peripherals to add, the way forward for networking, how



The Science Museum will have their own stand at the Acorn World show and will be offering free childs' tickets

to contact local support organisations, and so on.

Question time

For those of you who prefer to air your problems under the public gaze, there is also a chance to have your say in Technical Question Time. Held in the theatre at 4.20pm on Saturday, a panel of experts will attempt to tackle some probing problems.

If you have a question to put to the panel, then write to us at Acorn World Question Time, c/o Acorn User, Redwood Publishing, London, NW1 0AG. We will award a prize to the most imaginative question.



Headed by David Bell the Acorn support team aim to be the problem-busters of Acorn World. From left to right: Kerris Poole, David Bell, Sue Wall and Liz Morris (front row) Peter Dunn, Steve Arnold, Phil Colmer, Neil Kelleher, Ran Mokady, Dean Murphy, James Bye and Garry Neale (back row)

The education area

The education area is taking a hands-on approach to get its message across. There will be interactive displays on networking, a key area of development for Acorn. For teachers and students who want to have their own machine, there will also be desktop advice sessions on the personal purchasing schemes Acorn Assist and Headstart, for students.

Three more interactive displays focus on primary, secondary and special needs education. With their specially-designed format, these screens should be able to answer detailed questions such as, 'what software is suitable for KS4 Mathematics,' or 'where do I get advice and training on the use of portable computers for field work.'

But to really capture a hands-on feel, the features area goes one stage further. If you want to see pupils abseiling down a tower, while wired up to an Acorn machine, this is the area to visit. Secondary pupils will also be putting DIY Replay films to classroom use, and Key Stage 4 children will make exemplary use of the Design Processor.

Art Editors' *Impression*

Acorn User's very own art editor, Tony Judge, shown below will be hard at work in Acorn's printing area. As our art editor his job is to take the elements of a page and lay them out in *Impression*, starting from our page template. At the show his brief will be slightly different – to lay out a guide to the publishing area of the show.

This will give visitors their first chance to see monochrome PhotoCD shots used in a DTP page, and the final pages will be output on the waiting AB Dick printing press (shown on the left).





Tony Judge offers some expert advice on Impression layouts

Other stands

News is beginning to filter through about new software releases planned for the show. Computer Concepts has announced that they will be releasing two new versions of *Impression*: *Impression Style* and *Impression Professional*. The latter is sure to please all us folks at *Acorn User*, since it will include four-colour separations and a few other long-awaited features.

Meanwhile Irlam will be showing off an improved version of the *Replay DIY* software with special effects such as time lapse, which allows you to speed up cloud formations and so on

Graphics fans will be able to see *ProArtisan 2* on the Clares stand plus other new releases like *Plot*, *Schema 2*, and *Rhapsody 3*. For full details on every stand and all the new releases see next month's issue of Acorn User.

Where and when

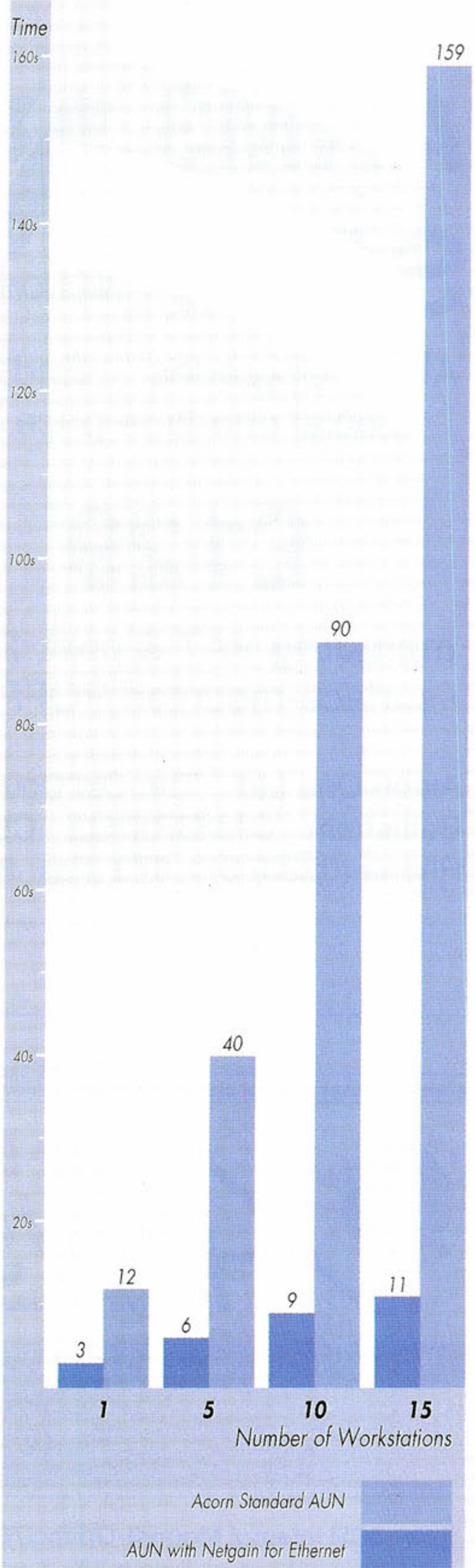
The show is held in Wembley Exhibition Centre, Hall 1 from 29 to 31 October. Advance tickets are available from Acorn World, Exhibition Planning Services, PO Box 162, Staines, TW19 5JX.

Advance prices are as follows: Adults £5, children £3, families £15. You can also order advance tickets by contacting the ticket hotline on (0784) 483818.

Wembley Exhibition Centre Hall 1 from 29 to 31 October

NETGAIN FOR ETHERNET

NETGAIN FOR ETHERNET



Netgain for Ethernet provides the fastest transfer rates of any network currently available on the Acorn platform. The product is designed to boost performance by huge margins when used in conjunction with Acorn's Level 4 AUN fileserver on industry standard Ethernet.

Time taken to load these applications over an Acorn network	Level 4 Econet Seconds	Level 4 AUN Ethernet Seconds	Ethernet with Netgain Seconds
Artworks	**136**	**87**	**8**
Maestro	**15**	**9**	**3**
Pipedream	**20**	**6**	**2**
Squirrel	**35**	**10**	**2**

The only hardware required is an expansion card in the Netgain server, which would typically also run the Acorn Level 4 fileserver.

NO MORE THAN 64K OF RAM IS TAKEN FROM ANY WORKSTATION.

Standard Ethernet interfaces may be utilised.

Typical transfer rate from a standard Ethernet system is approximately 200K/sec but Netgain achieves up to 900K/sec. In addition to this transport throughput increase, intelligent caching and a general reduction in bottlenecks result in staggering reductions in load times for typical applications.

The system manager simply copies their applications into the Netgain filer on the server, and from then on these products will automatically appear within the Resources directory viewer from the Apps icon on the icon bar, just as if the programs were in ROM.

Server Pack including Server Expansion Card and software for the first ten stations	£ 200.00 + VAT
Additional 10 User Packs	£ 100.00 + VAT

digital services

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Different strokes

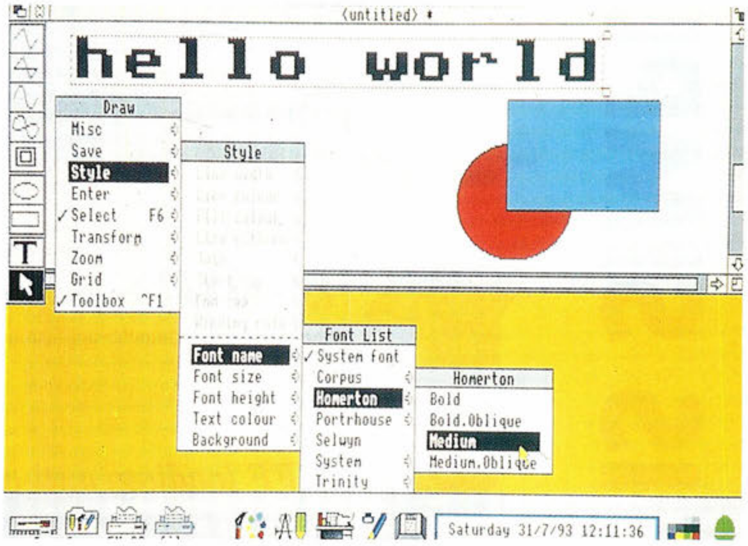
Richard Garrett takes a look at a package that should make life at the desktop a lot easier, at a stroke

Do you ever curse software authors who hide your favourite program functions in obscure locations? Do you suffer the tedium of digging through four sub-menus to change a font? Maybe you should try *Keystroke*.

Keystroke links events on the desktop to combinations of hot keys. Its main display is a Keystroke Definition Window, which displays key combinations and the six types of event available (see box). To program a keystroke, you move the mouse into this window, press the keys you want and, when you select an event type, the window displays the relevant programming options.

In all but text and command modes, these options define the tasks or programs to which keys are assigned and specify the window or windows in which they can operate. In these modes, you drag an icon around the screen with the mouse and select program menus to access, icons to click, or windows to move. Further settings vary with different types of event. In Icon Click mode, they specify the select or adjust button and double or single clicking. In Move Window, they set the screen coordinates to which a window will move or the relative move.

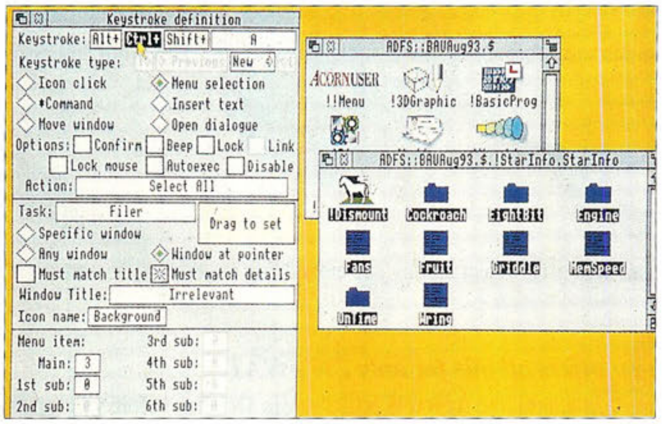
In Menu Selection and Open Dialogue modes, you specify, by counting down from the top, the menu lines you want to select. Menu Selection and Open Dialogue are the same except Open Dialogue waits for you to choose an option and Menu Selection closes when a function is performed.



Have you ever wanted to do this with just a double-key press?

Features

- Hot key editor for Risc OS desktop.
- Drives six event types (Icon click, Menu selection, Open dialogue, *Command, Insert text and Move window).
- Can assign events to any key plus <ctrl> and/or <alt> and/or <shift>.
- Automated menu selection down to six layers of sub-menus
- Option to chain multiple events to a single keystroke.
- Option to save keystrokes in playback-only modules.
- Autoexecutable keystrokes performed at timed intervals.



Setting up a keystroke to select all in the filer

The *Command and Text Insert options both produce keys which generate strings of text. The difference between them is that, in *Command the string is sent to the command line interpreter and in Text Insert, the information is sent to the current text cursor.

The Keystroke Definition Window expands to reveal a bar into which you type up to 115 characters of text and a number of options for inserting text from icons, window bars or the system clock. *Command also features short cuts for run, load and open dir.

All keystrokes can be configured to beep or offer confirmation boxes before running a function; multiple commands can be chained together on a single keypress and individual functions can be set to run automatically at regular time intervals. To confuse Dos users, this is called autoexec. With these features and *Keystroke*'s ability to store variables which increment each time a function is run, you can do sophisticated things. Once written, keystrokes can be saved as data or in a playback-only module called *Executor*.

You have to be careful choosing keys in this program. To accommodate key combinations which generate ascii or already have hot key assignments in other programs, each keypress is passed on to the current program after *Keystroke* acts on it.

This produces interesting side-effects. Writing this, I set up <shift><F1> to open the root directory of my hard disc. Fine till I used *Acorn Advance*, which scaled my document to 10% and left it behind the directory window causing it to disappear.

If, however, you're one of those users who drives with one hand on the mouse and the other on the hot keys, it could be worth your perseverance to give it a try.

Product details

Supplier: Quantum Software
Tel: (0506) 411162
Price: £29.95

Destination: Acorn World

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October '93

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All cheques made payable to Acorn Computers Ltd.
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Competition details from the Acorn World address opposite. *No purchase necessary

Acorn

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'Micro-Trader' is based on the double entry book-keeping system with Audit Trail and Trail Balance. This is the professional accounting system that is demanded by accountants and business organisations the world over.

'Micro-Trader' is also acknowledged as one of the easiest accounts packages to use. The everyday business transactions can be entered quickly and easily. Processing of these entries is completely automatic, leaving the user free to concentrate on the important task of running the business.

"The data entry forms are masterpieces of good layout" Micro User '92

"The 'Micro-Trader' system is so flexible and easy to use" Yorkshire Commercial trader

"It is powerful, flexible and certainly a pleasure to use" Acorn User '92

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"The system manual is excellent...It is both comprehensive and easy to follow" Acorn User June '92

"Micro-Trader" really could make a difference to a business...It will make your business easier to run... Computer Shopper August '92

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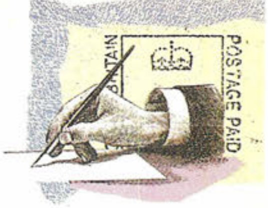
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PLAYING THE GAME

I greatly enjoy your magazine, but I do feel that, unfortunately, like most, you have a rather-lacking games section. I have friends at school (who have a rather more favourable attitude towards PCs and Amigas) who think Game Show is considerably better than any of your rivals in the Archimedes scene. However, I think a bigger supplement, say 25 - 40 pages in length depending on the amount of new releases per month, would make your magazine even more popular than it already is.

The supplement would contain in-depth reviews and hints and tips, and a section concentrating on previewing planned games. As the Acorn games market is currently expanding greatly (as you described in the December 1992 issue) I think a more appealing format to this section would help with (for example) percentage values for graphics, sound, playability, value for money and so on. Perhaps the section could be presented as a pull-out from the magazine.



Being in the targeted age group for this section as far as buying games is concerned, I am convinced that this is necessary to boost the Acorn market even further, with you being the premier Acorn magazine. We have seen what the future holds concerning the market, and I am looking forward to this as much as anyone, and I can't emphasise enough the importance of previewing games.

Asad Yawar
Surrey

Considering that in an average issue we have around 60 pages of editorial copy, I think that the suggestion of 25-40 pages of games coverage may be slightly optimistic. But ignoring that, Asad does have some interesting points to make.

The main one is that the Acorn games scene is expanding: with games like *Zool* and *Quark* around now, and mega-releases like *Speedball 2* on their way, there's no denying this. Yes, there *are* more released nearer to Christmas, but then we cover them in our packed games supplement. And as for previews, we're keeping our ears close to the ground: look at *Quark* in the August issue, where we not only had the first preview of the game, but also an exclusive demo on the disc.

As we move toward Christmas, Game Show will get bigger and better. But don't forget, we can only reflect what's happening in the market.

WHEN I'M 64

I picked up a copy of *Acorn User* out of interest today, and was pleased to read Mr Harvey's letter suggesting the newsletter *ByteBack*.

However, I was appalled at your sarcastic comment referring to the Commodore 64. Did you know that the old 64 is alive and very well indeed...

Mrs M V Rathbone
Southport

Sorry, I had to stop this letter there: we are an *Acorn* magazine, after all. A thousand apologies if the comment about the good old C64 caused any grief. Of course, we all know that Acorns are complete rubbish compared to the awesome power of Commodore's machines. Ahem. Next!

THE SUN SHINES OUT OF MY ARC?

It was a pleasure to read of Arm Ltd's 'pipeline' containing the Arm700 chip; no doubt it will address slow old Memc's limited access of Ram. The future for Risc OS users looks great: now we can look forward to Risc OS 4. The competition looks sad, no matter how good the adverts are. Who wants a fast box with a 'quick and dirty' operating system that has a graphical user interfaced glued onto it?

No, the real competition comes from Sparc stations, or Apple Macs: but at what price/performance ratio? Sure, Risc OS is not perfect, but we can wait for Risc OS 4. In the meantime, due to the good structuring of Risc OS, additions can be made. The future for Acorn users, dabblers and programmers looks bright.

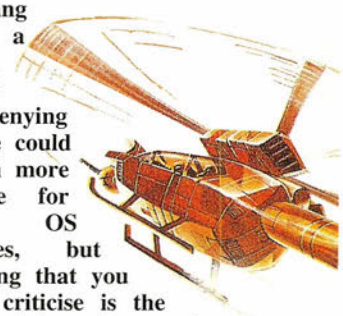
D Ginger
Hampshire

Nice to hear from a happy customer. Unlike . . .

I expect you get many letters like this, but I still feel that the problem of getting good software that is compatible with industry standard programs on the Arc cannot be overemphasised. Recently, software houses such as Computer Concepts have shown the computing world what the Arc can really do, yet the computer is still regarded as an education-only machine, which is a real problem for users like me.

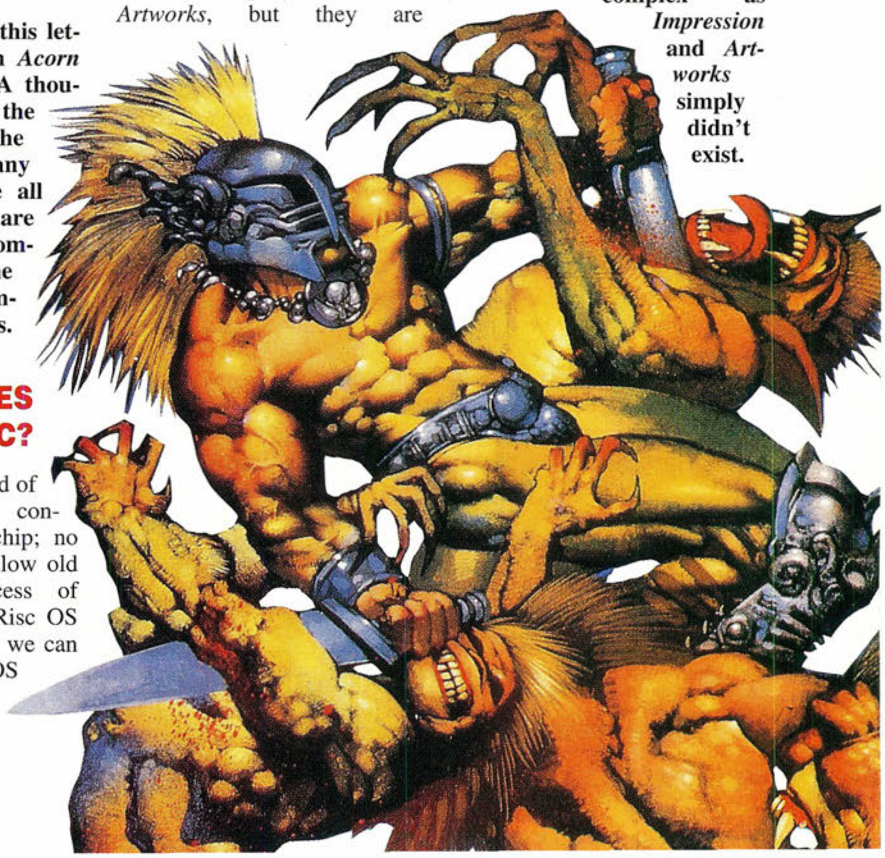
A problem I see with all programs, both games and serious application, is the cost. Some people might be able to afford £170 for a program such as *Artworks*, but they are definitely a minority. Surely software houses would sell more programs and go some way to slowing down software piracy if they were simply to reduce their prices?

J George
Yorkshire



Now hang on a minute. There's no denying that we could do with more software for Risc OS machines, but one thing that you cannot criticise is the pricing of the software. *Artworks* for £170 might seem a lot to you, but it is a total bargain for what you get: ask someone who has forked out for *Corel Draw!* Besides, if your average power user is willing to fork out £1500 or so for a multisync A5000, who can moan if the software package, one of the most powerful packages ever devised for Acorn computers, costs a measly £170?

Although the point about the lack of software is very relevant, moaning about high pricing is a habit formed by the 'good old days' of home computing, when software as complex as *Impression* and *Artworks* simply didn't exist.



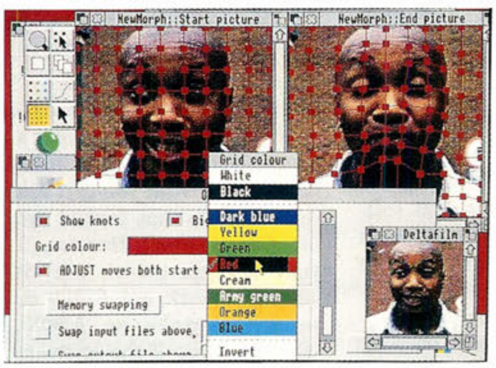
Face to face

The Acorn is fast catching other platforms with the quality of morphing packages on offer. With Morpheus, Pete Clements believes it may just have taken the lead

Morphing programs have been available for some time now on other computers and I must admit to having felt just a little bit envious. Maybe the trend is now beginning on Acorn machines, though, what with the release on the August *Acorn User* Subscriber's Disc of *Morph* and now a commercially-produced package, called *Morpheus*.

The software has been written by Henrik Bjerregaard Pedersen and is available from Oregan Developments at a very affordable £34.95, which includes postage and packing. The price is exceptional when you consider what other computer users have to shell out for a similar product.

Morpheus will run on a 310 machine but 2Mb of Ram and a hard disc is the preferable setup. Quite large images can be morphed on even a 310 by using a memory-swapping routine. This means only part of the image is held in memory with the remainder on disc. When *Morpheus* needs to see another section of the image, the old part is simply written back to disc and a new part is loaded.

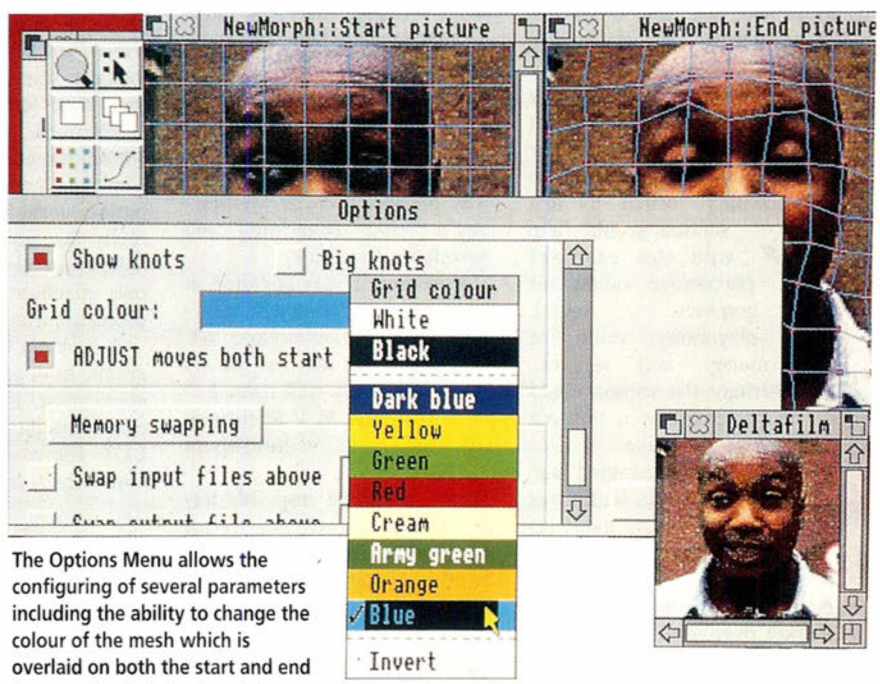


The default colour of the mesh is red and can sometimes clash with the colours in a picture underneath it. Although the colour of the intersecting points of the mesh or 'knots' can't be changed, they can be toggled between a normal or an easier to see size.

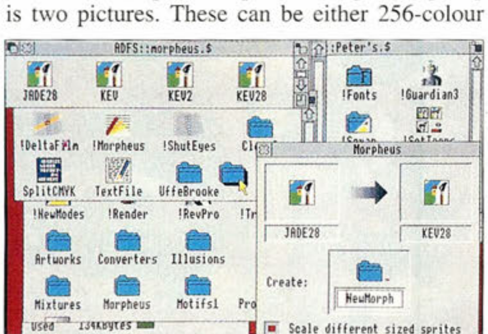
For those of you who don't know what morphing is (where have you been?) it is an effect used more commonly in the cinema and on television than in the home, to create a transformation from one image to another.

You've probably all seen the TV advert where the snail changes into a frog and then hops away. *Morpheus* makes this effect possible for Acorn users and, even better, you don't have to wait an eternity to see the results of your labours. A 20-frame animation can be compiled in as little as five minutes.

All that Morpheus requires to begin morphing is two pictures. These can be either 256-colour or greyscale sprites, or they can be 24-bit images. A variety of pictures exist in public domain libraries but, ideally, it is better if you have access to a hand scanner or even a camcorder to obtain those special personal morphs of Granny transforming into the goldfish.



The Options Menu allows the configuring of several parameters including the ability to change the colour of the mesh which is overlaid on both the start and end images. The default size of the mesh is set to ten units by ten but can be increased if required. Finer control is possible the more units there are.

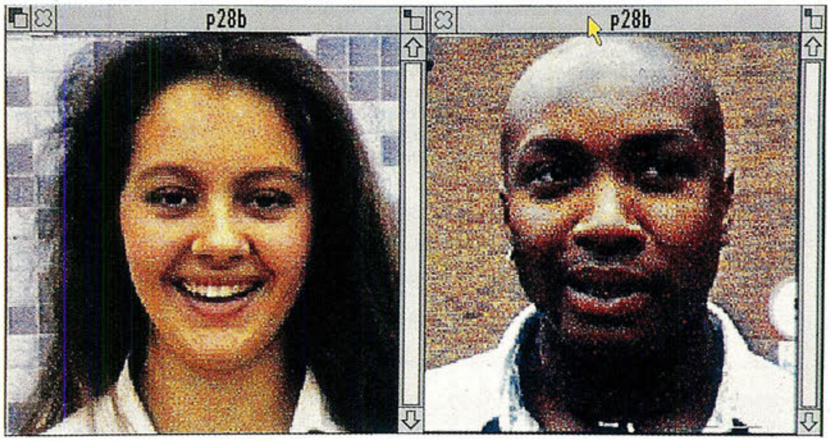


Clicking on the Morpheus icon opens a window which show two empty boxes at the top separated by an arrow. All that has to be done is to drag your start' sprite to the left box and your 'end' sprite to the right. The program will automatically scale pictures that aren't the same size.

Getting started

Once you have got your two end pictures you will find that setting up the way that objects or people morph into other objects or people is surprisingly straightforward.

The two pictures, the start and end frame, appear on the screen together and are covered by a grid with knots at the intersections. A toolbox is attached to the picture on the left and contains tools for zooming in to an area, setting guidelines and groups, toggling the grid on and off and editing the knots.



Jade and Kevin were digitised as shown above, from a camcorder image and output to Mode 28 after undergoing processing in Change FSI. Initially the meshes on the two pictures are identical.

If the pointer passes over a knot on the right picture, the corresponding knot on the left picture is also highlighted. The idea is to move the points on Kevin's face so they line up with the equivalent features of Jade. You can 'morph' a single frame at this point which gives you a half way transition between the two faces as shown on the left.

This is useful for checking if you've adjusted the mesh correctly because sometimes two faces will just dissolve into each other instead of the features moving smoothly in a sequence.

The number of animated frames can be set from just a few up to fifty or more. Twenty five frames is equivalent to a second of animation but if a high resolution mode is used it will eat into disc space unless the images are very small. The Number of Frames dialogue box gives a readout of required disc space every time the frame number is increased.

This latter feature is probably the one that most people will use the most, as it is this tool that allows you to move the knots and thus create the smooth transition from one frame to the other.

If only a small part of a picture is required to move, a changing expression on a single image, for example, then the grid can be turned off and groups of knots applied to areas such as just eyes and mouth. This makes *Morpheus* very comprehensive in its editing abilities and although this 'fine control' may seem a little daunting at first, it is really quite easy to master.

Saving the grid

Once you are happy with your edited grid you can save your setup for later use. This includes all the information relating to the grid, groups of knots and even the grid colour itself.

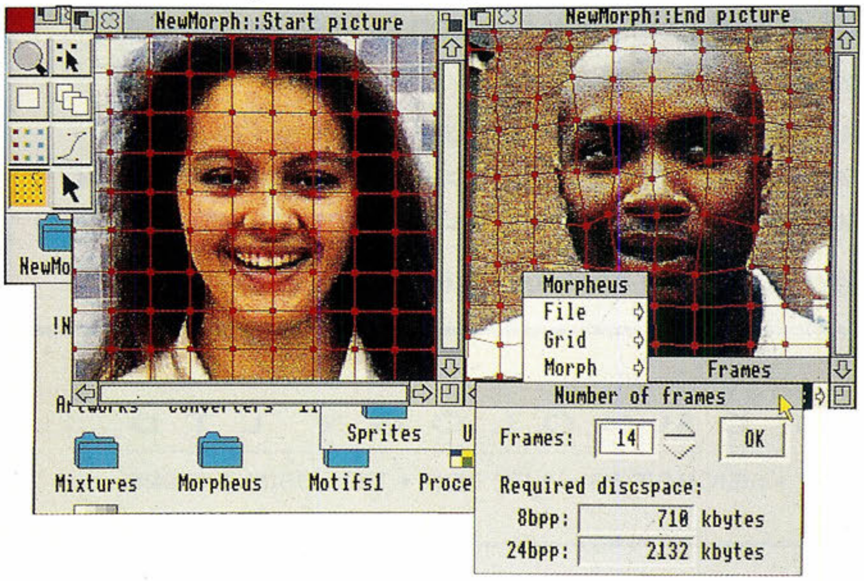
Single frames can be morphed, showing the



midway image between the two pictures. If two faces are used then the results can appear quite strange, with this new person having a mixture of characteristics of the two. Sequences of frames can be morphed and saved to a directory for later playback in another part of the program, the Delta Animator.

However, animated films can be made directly by setting the number of frames and dragging the save icon to a directory viewer. The author has implemented a solid drag routine into the software instead of the normal outline-save procedure and even this small feature gives the impression of a very polished piece of software.

The frame counter gives an idea of the space required on disc for the animation to be saved and even if your sprites are too large, they can be reduced in size at this point by changing the information in the size box. The sprites I used for Jade and Kevin were 228 x 228. Changing this information to 114 x 114 more than doubles the space available on a floppy disc.



Animation timing

The timing of the animation can also be changed; it can be set to regular, to speed up or slow down, or to start off fast, slow down and run fast at the end of the sequence, or start slow then fast and then slow again.

These options are set before saving although some further control is available once the film is running. The animation can be set to run at normal fast speed, medium or slow.

You can also step through the sequence a frame at a time or even create a yoyo effect, which worked particularly well on my Jade and Kevin film. It gave the impression that after changing into Kevin, Jade returned to her former self and smiled at her new-found ability. I showed the two of them this film and I still don't think they have quite got over the experience.

Conclusion

With little time and an incomplete preview copy of *Morpheus*, that never crashed once on me, I have barely scratched at the surface of the capabilities of this outstanding piece of software.

When all of the features are implemented in the release version, we Acorn users will have an outstanding, value-for-money morphing package. And when you consider the low price of *Morpheus*, this is one that is going to put other morphing packages on other computer platforms to shame.

If any other Acorn software house is thinking of releasing its own morphing software, it will be hard pressed to better *Morpheus*. An extremely polished piece of software and a lot of fun as well.

Product details

Product: Morpheus
Description: Commercial morphing package
Supplier: Oregan Software Developments
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Price: £34.95

Pictogram



Pictogram is an application that progressively teaches children the use of graphs for representing data. Pictures are dragged onto stacks and may either be displayed vertically or horizontally. The graph can be switched to a block graph where the pictures are replaced as more abstract blocks of different colours. Finally the blocks can be joined into one long bar to create the familiar bar chart.

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KEYSTROKE
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Do you tire of all those unnecessary repetitive menu selections, wish that your favourite program had more Control key type short cuts? Or just tired of moving and resizing windows to the same position every time you use a program! Well a revolutionary new utility has been developed for the Acorn Risc OS machines. This program can actually remove all of those tiresome mouse clicks with just one key press!

Believe it or not, *Keystroke* can actually control any Risc OS program. Imagine a single key press to perform 'Group frames' in Impression, perhaps set 'Text Repel' in a frame to a specific value or a quick key press to turn a frame to transparent colour! Ctrl+T could bring up !Paint tools window, F1 to mount a disc, F11 to bring up the task display, or F3 to save a file, or save the file automatically every 15 minutes. *Keystroke* can perform these and many more amazing things! *Keystroke* also comes with a !Buttonbar application that allows keystrokes to be used by clicking on an icon. Create your own tools window! A complete Impression tool window is included!

Archimedes World - "damn clever, easy to use, best of its kind, 5 out of 5!"

There is just not enough room here to tell you about our program, send off for our demo disc for £1.00 and see for yourself what you can do with this incredible program.

Keystroke is suitable for all Archimedes running Risc OS 2-3.11 and is offered for only £29.95 fully inclusive. No VAT.
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POWER to the people

Datapower started as the handy little database we all need. But after a few months, James Richards finds it's moving into unexpected areas of his hard disc

I've been using *Datapower* for a good three or four months now, and every day I use it more and more. This package can be used for a lot more than I bargained for.

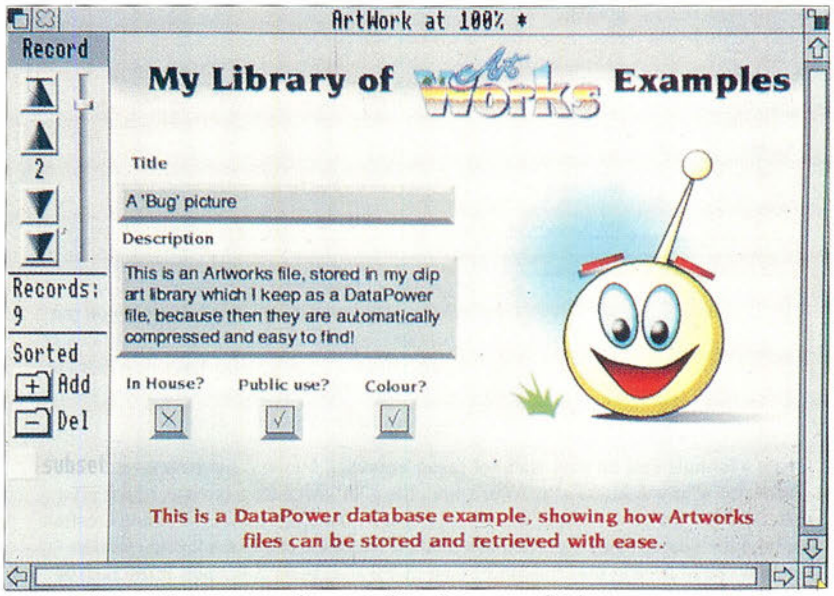
Generally, mailshots are limited to wordprocessors, but not so with *Datapower*. Formulae fields are a very powerful feature and, used in the right way, *Datapower* can behave more like a spreadsheet than a database.

In fact it is so versatile that you can be a little awed by what you can do with it. After a slow start, *Datapower* has crept into every corner of my hard disc, and now it keeps me organised at work and home. This article is for those of you who are just getting into *Datapower*; it will help you realise there is more to this database than meets the eye.

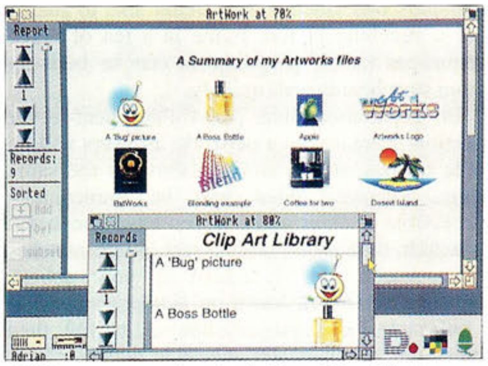
Power two

Meanwhile, the next version of *Datapower* is well underway. It contains a few enhancements: you can expect the ability to incorporate *Artworks* files into your databases, as graphics or backgrounds.

Iota also told me that you can expect to be able to search for a matching sprite. According to Iota there is a simple Risc OS routine to compare two sprites. Simply dropping in a sprite that you want to search for, and asking it to find



Artworks files can become a seamless part of any Datapower database



A Datapower report can just pick out the pictures

Moving layouts

On some of my databases I have several layouts, but could not see any easy way to change the order they appear on the layout list.

After my initial annoyance with this drawback, I realised that there was an easy way to sort them all out.

Imagine three views of my address database, Full Info, History and Contact Details. I wanted to move my History layout – which details past events – to appear after Contact Details.

To do this I chose the History view, chose New Layout – which made a new layout the same as the original mailshot layout and listed it after the Contact Details view. Then I deleted the original History layout.

Hints & tips

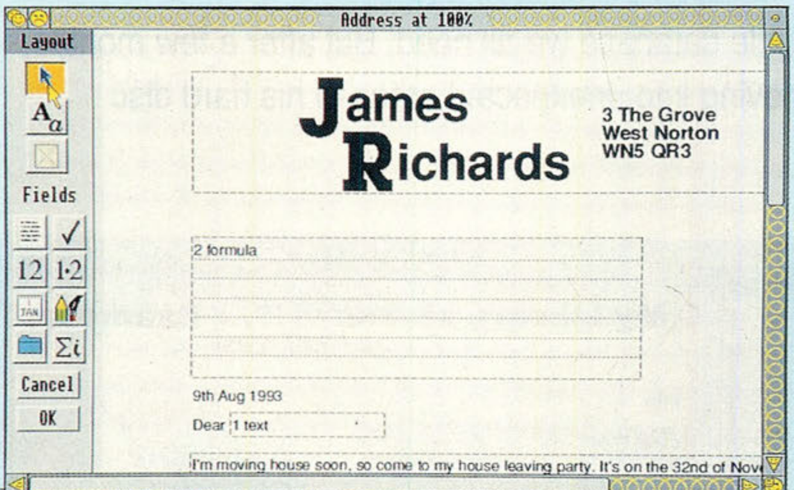
- Click Adjust on add record to make a copy of the current record.
- Field renumbering makes you jump fields in the right order.
- Make regular backups of your work by saving a CSV data file on to another part of your hard disc.
- Use the arrow keys to jump record by record.
- Use SHIFT+TAB to jump backwards field-by-field: use TAB alone to jump forwards through the fields.

Shooting people

The ingredients for a mailshot are an address, a salutation (the Dear Fred bit) and the letter. You have two choices concerning your stationery, envelopes with address labels stuck on them, or window envelopes. The latter is my preference, print out the letter and when you fold it up right then the address should fall neatly inside the window.

Take a look at the screen shot to see how I have arranged this in *Datapower*. I created an A4-sized report layout, and measured where the envelope window was. The address frame was put on the layout using the page rulers. In my contacts database my Address and Postcode fields are separate, so to add that touch of class I have taken the postcode field and tacked it onto the end of the address using a simple formulae field. Addresses vary in length, and with most other databases you'll end up having the postcode floating a few lines below the address.

I've also stuck the addressee's name on the top of the address. The formula to do this is quite simple. Imagine that the fields have the names, 'Full Name', 'Address' and 'Postcode'.



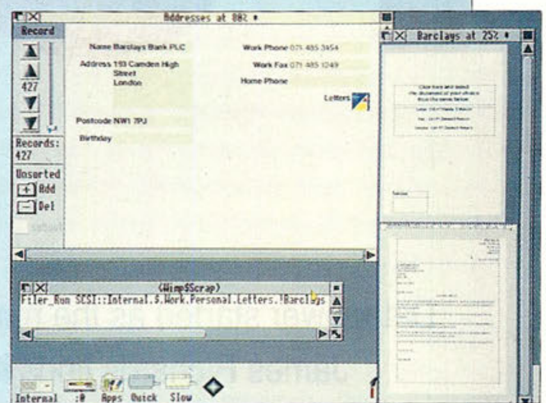


My mailshot layout showing the address formula field and the letter. In the small window you can see what the letter looks like. Any database worth its salt can help you with mailshots. However I use *Datapower* on its own to do my mailshots; I don't involve another application at all.

Create a formula field on your mailshot called 'Formulae Address' and have a formula like: 'Full Name'+"\n"+'Address'+"\n"+'Postcode'. The +"\n"part adds a carriage return after each field. For the actual text of the letter I create a blank frame with the Frame Creation tool and then dump some text from *Edit* into the frame (do this in the layout creation mode as I have done in the screenshot) then that text appears in the box. It can then be edited to your liking by double-clicking on it and using *Datapower's* text editing features. This does mean that you are limited to one style in the letter text, but it keeps things nice and simple. When it comes to filing letters, *Datapower* can also be useful.

Filing letters

Now, it's easy storing *Draw* files or *Edit* files in a *Datapower* Anyfile field, but when it came to storing *Impression* documents I was stuck. The Anyfile field cannot store applications, and that's



A screen shot showing my address database, with an obey file pointer. Double-clicking on it has loaded up the Impression document on the right.

exactly what an *Impression* document is. My letters and faxes are based on an Impression file which has within it individual master pages for a letter, fax and so forth.

Each of my contacts gets one of these master documents, and each time I want to send them a letter I use Create New Chapter from the *Impression* menu. Then I can choose the master page which the chapter is based upon, and the chapter is added to their mail file permanently, each chapter being a different communication on a different date. This way I can store all my correspondence to that company or person in a single *Impression* file, and access it immediately.

So, to allow me to get straight at the *Impression* files from *Datapower* I used an Anyfile field to hold an Obey file, which contained the following text:

Filer_Run
SCSI::Internal.Work.Mail.Contacts.!AcornUsr

That is, Filer_Run followed by the pathname of the Impression document for that contact. I saved it from Edit on to the Anyfile field and now when I double-click on the Obey file in *Datapower* the *Impression* file is loaded and I can add a letter, fax or any other master page, and simply save it.

Complex searches

Sometimes a simple search is not good enough. For instance, I have a database which I use at work that controls my stock levels. Sometimes I want to know if an item has been ordered but the supplier has not delivered on the date agreed. The search formulae that I type in to make this search is:

'Order Sent to Supplier'<>NULL AND 'Order Received by Supplier'>10/8/93 AND 'Supplier can deliver'>16/8/93 AND 'Item in Stock'<>TRUE.

Now if I had to type this in every time I wanted to make this search I would not be a happy man, but if you type it in you can save it as a text file, and reload the formula anytime you need it.

To save a search formula, type it into any field, then press CTRL A to select the text. Now drag this text on to *Edit* and save it with an explanatory filename.

Then the next time that you want to search using this complex formula, simply initiate a search in *Datapower*, then drag this formulae text file back into any field.

a matching one will match all records with the same sprite. This was incorporated, thinking of *DIY Replay* or the soon-to-be-released *Kaleidoscope* video editor. Being able to search for a matching picture frame in a list of video sequences means programmes can be built up from storyboards very quickly.

In September, Iota plans the client-server version. Running on a network, all users will be able to look at the same database at the same time. Records added will be immediately accessible to other users. If you have conducted a search, then a user adds a record that matches your search, this is added to your subset. Imagine a network based on *Datapower*, where you search for messages addressed to you, then messages automatically appear in your mailbox. Sounds good, and I can't wait to see it.

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Float on

Acorn's FPA10 chip is finally here, but what can it do for you? Ian Burley road-tested the chip, and found that some applications benefit more than others

Acorn's new floating point accelerator, the FPA10 chip, can make some applications run up to ten times faster. It does this by using a maths co-processor to execute floating point instructions.

Similar maths co-processor chips are common on computers outside the Acorn world – one is built into Intel's 486DX chip. The FPA10, designed by Arm Ltd, is technically interesting because it is a Risc design like the Arm processor. Some complex, but less frequently needed, maths functions (like certain trigonometry operations) are not implemented on the chip but are retained in a software emulation. This optimises the frequently-used operations and keeps the chip small, so it is cheap to make and very frugal on power.

Unfortunately, not all Acorn users are going to benefit from the new chip. Some programs completely ignore the FPA10 and others are compatible with it, but don't gain very much. But the performance of some programs is transformed by the FPA10.

Any application which makes calls to the Acorn software floating point emulator (FPE) will be compatible with the FPA10. As the FPE is a software compromise to preserve compatibility with the real chip, many programmers decided to use their own non-standard routines to run mathematical functions as fast as possible. This has meant that programs like Computer Concepts' *ArtWorks* drawing program and the *PowerShade* ray tracer from Arxe Systems have attained very good performance, but won't benefit at all from the FPA10.

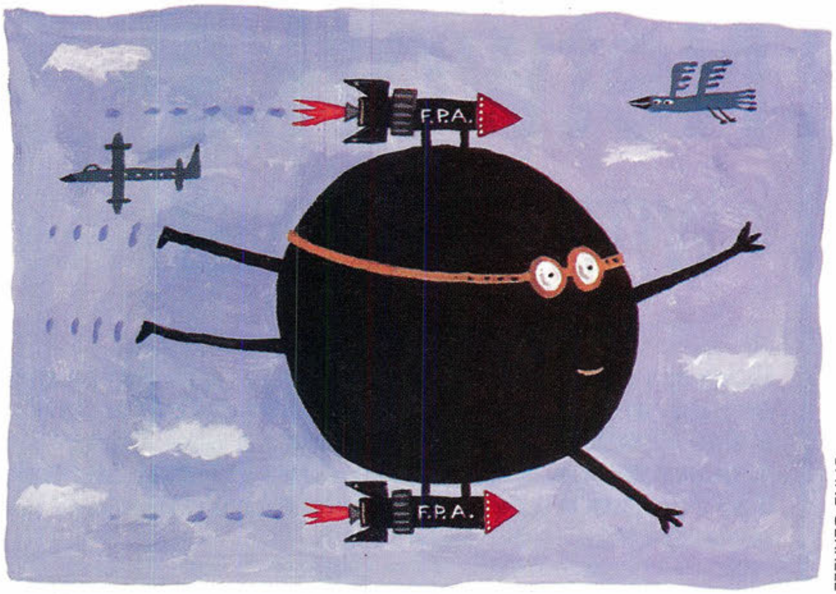
Other programs you'd think would enjoy a clear performance kick include spreadsheets. Colton Software's *Pipedream 4* and *Resultz* spreadsheet applications are both compatible with the FPA10, but our tests indicated no noticeable speed improvements. This is because modern spreadsheet programs are optimised to do as little unnecessary calculation as possible, but they spend a great deal of time looking after graphical user interface issues.

'Unfortunately not all Acorn users will benefit from the new chip'

If you dig deep enough, *Pipedream* and *Resultz* do speed up because of the FPA10, but the improvement is blotted out by unrelated system overheads. Although we didn't get a chance to test Clares' *Schema* spreadsheet, the story is likely to be similar.

Another program which is mathematically intensive, but failed to show any benefit from the FPA10 is Risc OS 3 *Draw*. Once again this is because *Draw* uses integer maths routines which sacrifice FPA10 compatibility.

So far the picture might look a bit gloomy for prospective FPA10 purchasers, but the good news is that we have tried several applications which go like a rocket with the FPA10. Bench tests also show the FPA has huge potential which stands up very well compared to hardware maths processors on other platforms like the PC.



SPIKE GERRELL

Although *PowerShade* doesn't go any faster with the FPA10, two of its public domain rivals, *Raytrace* and *Persistence of Vision* (POV) and Clares commercial *Illusionist* package, exhibit speed increases of between five and ten times.

The desirability of reducing an hour's worth of image rendering to just six minutes is obvious. Acorn has told us that Oak Solutions' *WorraCAD* renders drawings up to ten times faster. Unfortunately, neither *ProCAD* or *CADet* from Minerva uses the FPA.

There are also plenty of gains, if you use the double-precision version of BBC Basic, Basic 64, included with Risc OS 3.1. Unlike ordinary Basic V, Basic 64 uses the FPE/FPA10 maths route. This makes it much slower than Basic V normally, but with the FPA it's actually slightly faster. Silicon Vision's *RiscBasic* compiler is also FPA-compatible and Intelligent Interfaces reports that its Fortran 77 compiler runs some routines up to 20 times faster with the FPA10.

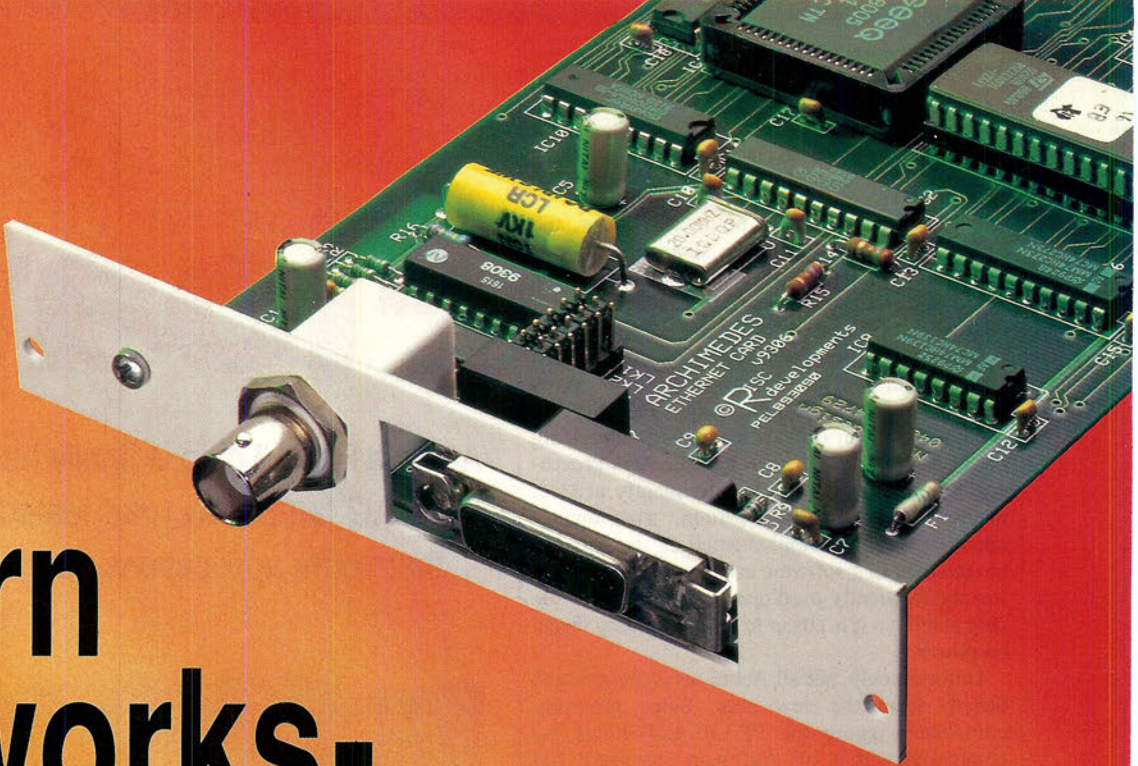
At £99 + VAT the FPA10 is very good value, but at the moment its usefulness is restricted. There is a classic chicken-and-egg situation out there because many software houses won't optimise their programs for the FPA10 until enough are out there. But if you're a user of an FPA10-compatible ray-tracer or Cad package, or you need to program intensive maths, go for it.

Details. . .

The FPA10 chip can be fitted to the A5000 and A540/R260, though the latter may need a replacement processor card. A300 and A400-series machines will need an add-on upgrade card like those available from Simtec, CJE Micros and Ifel. Some A3010s with a mezzanine processor board can accept an upgrade as can the original A3000, but there's no FPA for either the A3010 or the A4000.

For our tests we used a Simtec upgrade (£199, both Arm3 and FPA fitted) in a A440/1 and A5000. Below are some factor speed increases:

Basic V: Zero
Basic 64 (non-trig): 10.95
Basic 64 (trig): 4.16
Pipedream 4: Marginal
Topographer render: 1.475
Render Bender 2: Marginal
Illusionist: 5.34



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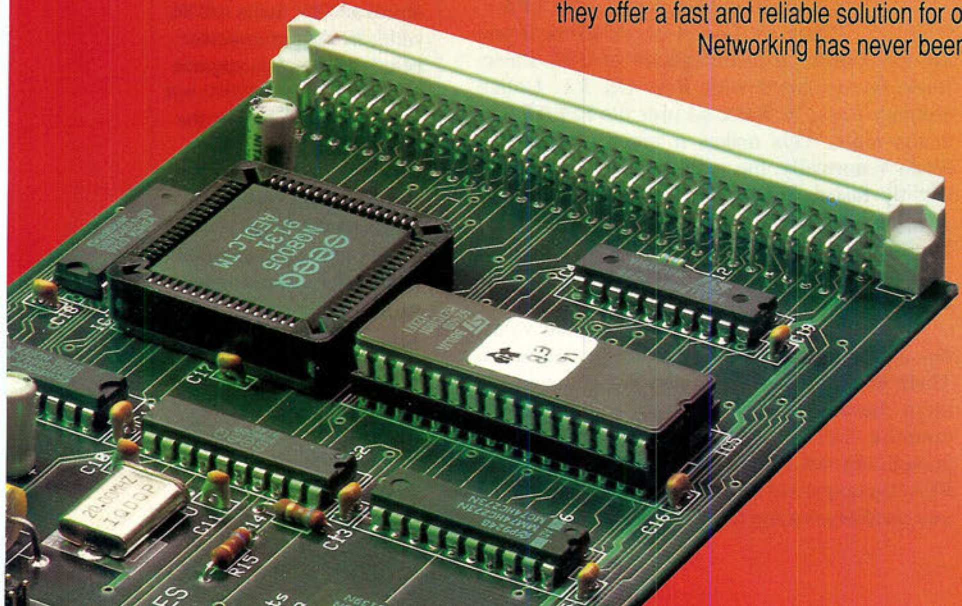
Managing a class of children all trying to run the same program on floppy drive computers can be a nightmare. Discs get lost or damaged and files can be corrupted, all of which will waste a lot of time at the beginning of a lesson. With hard drive machines things are a little better, but the duplication of resources means wasted money. And there is still the problem of students having different versions of the software or 'accidentally' overwriting it. Not to mention viruses!

Now there is a reliable alternative - Ethernet. Ethernet networking has been used by businesses and universities for some time, and is now available for Acorn computers. The benefits of a fast network are considerable, and you will have total control over the software used by the students. All users will also be able to share resources like CD players and printers, significantly reducing costs.

RISC Developments have designed and produced a full range of fast Ethernet cards for all Acorn RISC computers, to be used in conjunction with Acorn's new AUN Level IV network software. Our cards are being used in a growing number of educational establishments because they offer a fast and reliable solution for only £139. Networking has never been so easy.

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For anyone wishing to know more about networking, we have produced a pamphlet called 'Introduction to Networking Acorn Computers'. For a free copy, or if you require more detailed advice about networking, please do write or telephone.



RISC developments

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Smooth as silk

Computer aided design comes out of the design studio and into the art room as Spot and ProArtisan 2 tackle a silk screen project. Eleanor Walsh paints the picture for you

Art programmes for the computer are now widely used in the design industry, for a range of computer aided design tasks.

So, when the students at Harlington Upper School decided to use the computer in their silk screen prints, *Spot!* from Clares seemed the ideal tool. *Spot!* is a colour separation programme supplied with *Artisan 2*. It is ideal since it breaks a picture into its colour components, producing a sprite, for instance, of all the black parts of a picture. Likewise, silk screen printing involves printing separate colours, one by one, to build up an image.

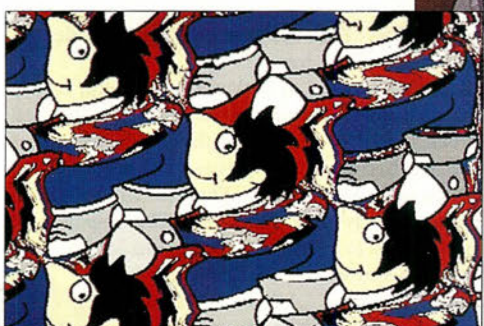


ROBERT CLIFFORD

The final results, looking good enough to wear

In the classroom

This task was perfect for year nine who have a five-lesson block with *Artisan 2* as part of their art lessons. A small print is useful if you have 250 students, so we decided to put *Spot!* to the test. It worked well and was of double benefit, fulfilling the commitment to IT under the National Curriculum.



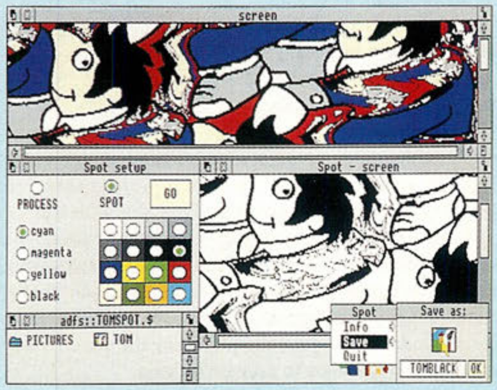
A repeated image creates a striking shirt design

Although *Spot!* was ideal in concept, it produced too small an image for the examination students. So, once we had achieved a complete print, we thought about producing a larger area. This is where *ProArtisan 2* comes in. The students tried the pre-release version and were delighted with the program but came up against a problem with *Spot!* It would not accept a sprite

1 Loading up the software

Spot! comes on the *Artisan 2* disc. You simply load it onto the icon bar. The students save their work as a screen, restricting the number of colours if cost is a priority, as this restricts the number of inks used later on. A typical design is shown opposite, using four main colours plus black. The sprite is dropped onto the *Spot!* icon and a window opens as shown in the screenshot. Select the *Spot!* button as shown.

The palette may not reflect the colours mixed by the student so I suggest loading the sprite into *Paint* and clicking on Show Colours. This lets students check their colours as they save them. Clicking on a colour tells the program you want a black and white sprite for the areas in that colour.



② Saving Spot

You can check the sprite before saving. For instance here we have produced sprites for the black part of the picture and the yellow parts of the picture. To save the sprite

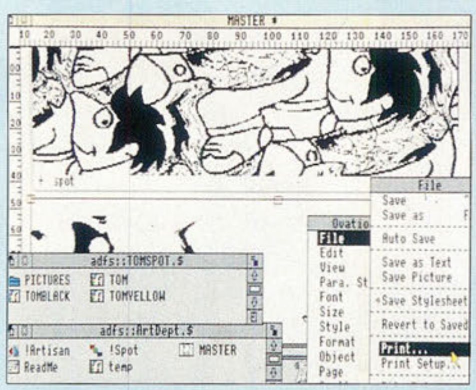




click on the *Spot!* icon with Menu and choose Save. Type in a suitable name, such as Tomblack, and then repeat for each of the other colours.

③ Loading each colour

The first stage is complete. You now need a box of laser film and a master page set-up in *Ovation* or *Impression*. I set up two frames of the same size on an A4 page for speed and economy. Load the master page and drop one colour separation into each frame – check the crosses in the bottom corner are visible. Load the film individually into the printer and then print. It is wise to label each film for later identification. With 250 students I speak from experience.



④ Preparing the screen

Now you need to prepare a small screen capable of taking the designs: one for each colour.

First the screen needs to be degreased and light-sensitive emulsion applied: these stages are beyond the scope of this article but the chemicals are supplied by Sericol: and there is a fact sheet describing these stages in detail. Read it carefully since some of these chemicals are corrosive.



The next task is to keep the light-sensitive emulsion paint in certain areas of the screen to create a replica of your laser films. The 'colour separated' films for your design are put on the glass, and taped into place. The dry screen goes on top of the film, with a piece of black sugar paper on the mesh and a heavy weight on top. Leave this for seven minutes or so for the light to do its work. When the time is up, wash the screen on both sides with warm water. After a few minutes the design appears in white on the screen. A wash with cold water on both sides produces a processed screen. You now have the images on your screen: one for each colour component of your design. Finally the screen needs to be taped around the edges with brown paper tape to prevent leakage.

⑤ Now print out each colour

Now the first colour is ready to be printed. Wash and iron the fabric. The t-shirt needs to be held in place: I use T-Fix sprayed on a piece of card and placed inside the garment. Then tape the shirt to the table. Lay the screen in place over the t-shirt, with the design for the darkest colour over the



centre. Put a label underneath the cross, so it is printed on the label, not the fabric. All the unwanted areas of the screen must be covered using paper and tape. The darkest colour dye is put on the screen, above the area to be printed. A squeegee is then used to force the ink through the mesh and on to the fabric.

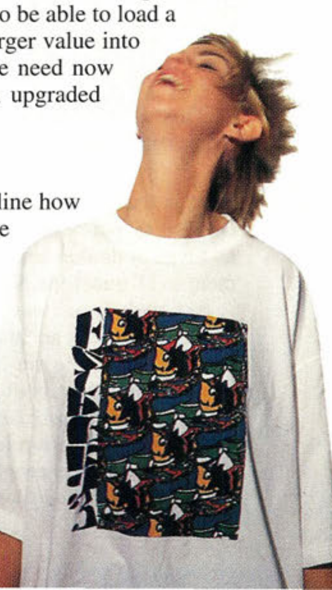
Wash the screen and repeat this procedure with the next coloured ink and colour design. Continue until all the colours are printed. The final print is a replica of the original *ProArtisan* design.

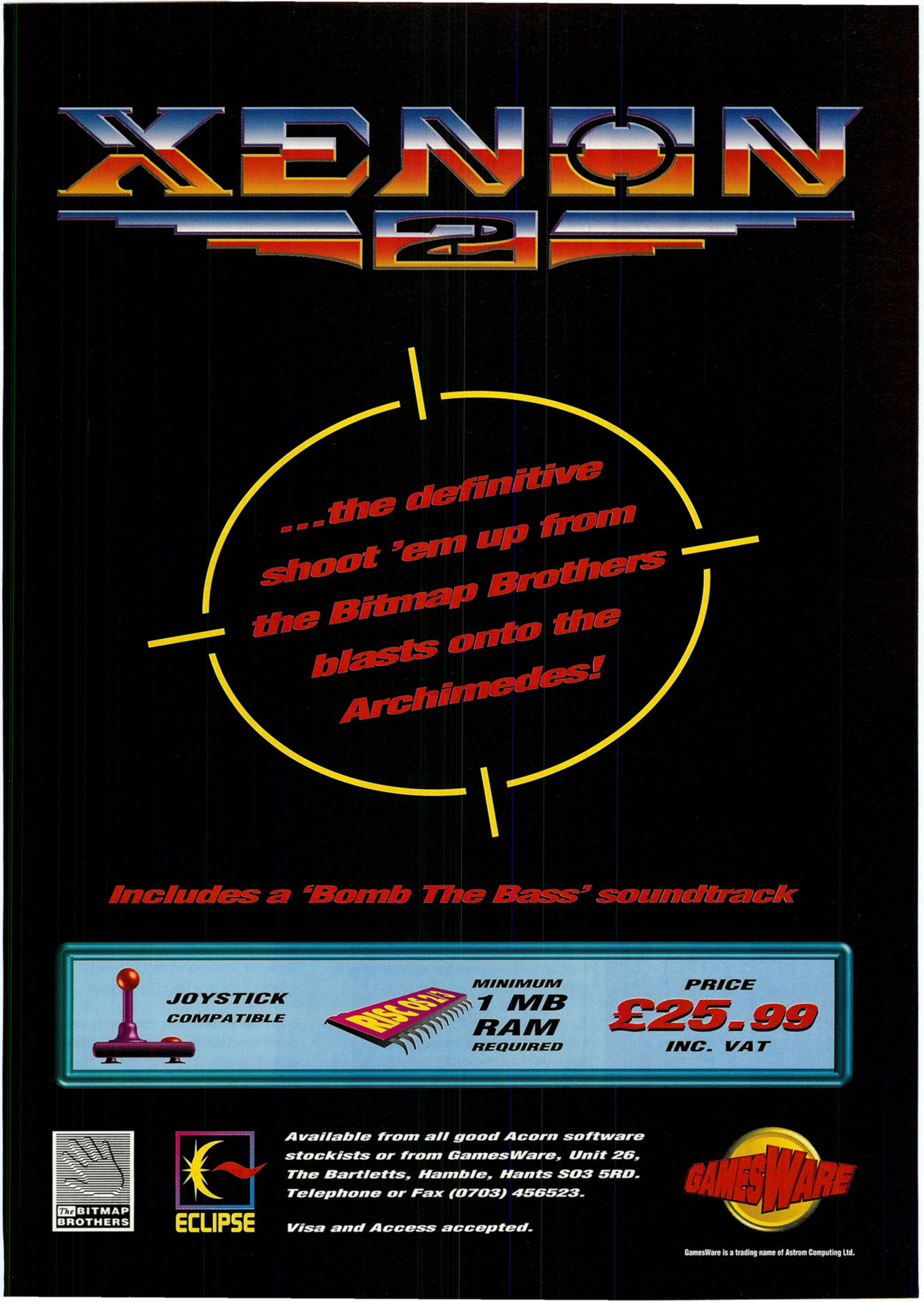
larger than 80K or one in the Mode 15 *ProArtisan 2* requires.

Clares promised to look at the problem, but, in the meantime we improvised. First we changed screen mode to 12, loaded the sprite into *Paint* and grabbed it in two pieces, making sure our sprites were 80K or less. Then we used *Spot!* in the usual way and joined the film together. It would be more sensible to be able to load a Mode 15 sprite with a larger value into a modified *Spot!* All we need now is for Clares to issue an upgraded *Spot!* with *ProArtisan 2*.

THE PROCESS

The steps one to five outline how a design makes the transition from screen to T-shirt: popular with students. Silk-screen printing is only described briefly here, but there are a number of books which describe the process.




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Many of us yearn for a paperless office. Converting sheafs of paper into computer text is a tempting proposition and, without a personal copy typist on hand, it can be an arduous task.

Sleuth, a new Optical Character Recognition package from Risc Developments, allows you to skip the typing stage and scan in the complete text. Armed with a copy of the *Sleuth* software and a monochrome scanner, you can convert paper documents into computer text at an average rate of 30 words per minute. This includes the process of correcting any scanning mistakes but, if accuracy is of less importance, this conversion rate can be much higher – up to 300 words per minute.



Sleuth automatically recognises major fonts such as Homerton, Trinity, Corpus and others. Once a section of text is scanned in, *Sleuth* compares each character to all the font definitions it knows, and, using a statistical comparison, quickly tots up a shortlist of possible matches. The process is then honed down to give the best possible character match.

HOW TO ENTER



For more details on Sleuth, contact Risc Developments on (0727) 840303. Meanwhile we have five copies of Sleuth software to give away, each worth over £50.

To win a copy, simply answer the questions below, and send your answers on a postcard to Sleuth Competition, BBC Acorn User, Redwood Publishing, 101 Bayham Street, London NW1 OAG. The competition closes 1 October 1993.

1. Which famous sleuth used to live in Baker Street?

2. What is the best-selling book in the world?

3. What is the name of the area of memory in which fonts are stored?

Stunt Racer 2000

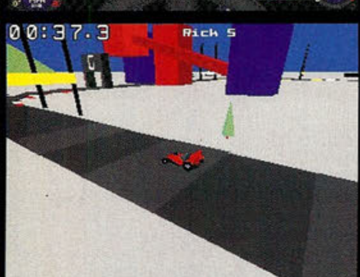
'A game ahead of its time!'













The creators of *Chocks Away* are proud to present *Stunt Racer* 2000.

The year is 2037 and the world of motor sport has changed considerably to meet the demands of the excitement thirsty audiences. The World Federation Entertainments Network (Known as Fednet or WFE) broadcast Stunt Racer 2000 to a worldwide audience of over 750 million. Those who are brave enough to race can reap the rewards of stardom, wealth, fame and glory or be lost amongst the mass of failed Stunt Racer 2000 drivers. The racing season takes place on 16 demanding tracks over all terrains including desert, arctic and lunar tracks featuring a wide selection of jumps and stunts. After completion of all 16 tracks the top drivers will get to race on the Supreme Stunt Racer 2000 track which is the ultimate test of driving skill.

Stunt Racer 2000 has been carefully developed by the Fednet team over the last year and includes all the best features from other racing games and many innovative new features. The game is designed to be pseudo technical whilst keeping the easy to play arcade feel.

GAME FEATURES INCLUDE:

- Fast solid 3D vector graphic with a large selection of viewing angles and track side cameras.
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- Two-player split-screen or serial link options.
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FedNet 25436 - 32

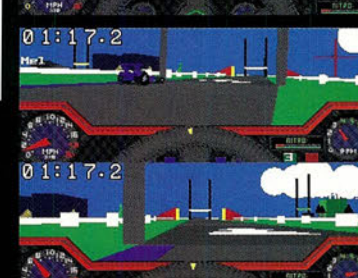
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Access

VISA









GAME SHOW

News from the games world with Fin Fahey

Street fighting fans can start polishing those brass knuckles; the Arc's first excursion into highway homicide, *Blood Sport*, will be out soon from Matt Black.

The game will offer a choice of ten tough guys to go one-on-one with the baddies, each of which will have a different style of fighting. There'll be a lot of visual action in *Blood Sport*, too. The backdrops, many on an oriental theme, will be animated with lots of birds in flight and innocent bystanders looking astonished.

On its way to the stores is a driving game from the team that brought you *Spheres of Chaos*. The as-yet-unnamed game is more a simulation than the usual out-the-windscreen white-knuckle ride, and gives a bird's eye view of the action.

The programmers have modelled-in the effect of different types of terrain and even the weather.

FISHY BUSINESS

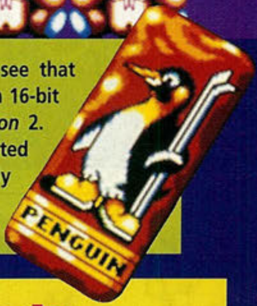


It looks like the latest in 16-bit conversions will be the sequel to *James Pond. RoboCod* (hardy har!) is to be brought to us by newly-formed distributors Gamesware, recently founded by Simon Lovesey, lately of Acorn.

As might be expected of such a cute adorable game, this is a platformer. James Pond, the fish who can breathe on land, runs around squashing baddies and generally performing watery mayhem. On an optimistic note, it's pleasing to see that this was very recently released on 16-bit format, unlike Gamesware's *Xenon 2*. Could it be that the long-awaited flood of conversions is finally about to hit the Arc world?







RENEGADE RUNS RIOT

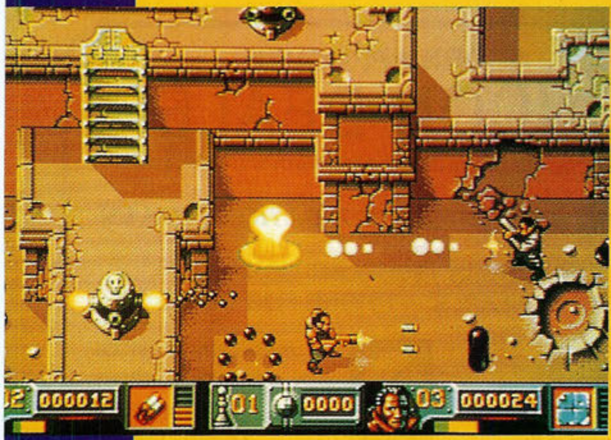
Renegade, the software company formed by the Bitmap Brothers and Rhythm records after the 16-bit success of *Xenon 2*, has announced a selection of new releases, with more to come. September sees *Sensible Soccer* and *Magic Pockets*. *Chaos Engine*, is expected by December.

Sensible Soccer was the best-selling Amiga game of 1992. In what the company claims is the biggest sports game ever – 64 human players can take part – you manage your team through a series of European competitions. One of the appealing aspects of the game is that it features continually-updated information on players, and includes newly-emergent soccer nations such as Slovenia.

Magic Pockets is a multi-level arcade game which features the Bitmap Kid. The fortunate kid has bottomless pockets in which he keeps a variety of handy objects, which is fortunate, because he has to make his way through a host of slavering baddies to get his lost toys. Mark Coleman, the man responsible for *Xenon 2*, designed the graphics and, no big surprises here, there's a dead-poppy soundtrack for this one too, this time by Betty Boo. *Sensible Soccer* and *Magic Pockets* will cost £25.99 each.







Cheats

Doggysoft's *Hacker*, offering cheat codes for many games classics, has been massively expanded, with codes for 95 games.

Andrew Ewart has a series of level codes for Power Station's *Axis*. For levels two to five enter: 2 yFishTankW 3 ankelRotar 4 yEngineVib 5 raphoneKin

Using the correct cases (upper or lower) for the letters is vital.



Diabolical

The Fourth Dimension is getting into supernatural territory with the release of *Demon's Lair*, an isometric arcade adventure set in the land of Kaxiyo. Pay careful attention to Fourth Dimension's publicity – apparently there are clues to solving the game in the screen shots.



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DUNGEON

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Despite an upturn in the number of new games released in the last year, no one has produced a full-blooded role player... till now.

Whereas games like *Heroquest* and *Heimdall* have only been half-hearted attempts at role playing, *Dungeon* uses the tried and tested formula of the traditional RPG.

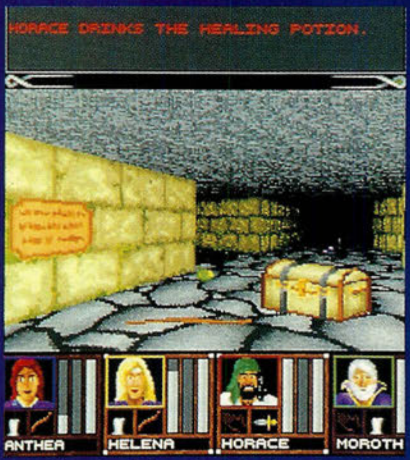
The game comes on three discs, plenty of space for an attractive intro to set the scene, but instead, you get an uninteresting loading screen and some dismal music. Fortunately, little disc-swapping is needed after the game has started, and this can be avoided if you have a hard disc.

The escape bid

While exploring an ancient monastery your band of adventurers has become trapped at the bottom of a deep dungeon filled with the usual collection of hideous monsters and hidden treasure. Your aim is to fight through seven levels, collecting food and valuables, before escaping to safety.

The main game screen consists of the view window, which allows you to see your surroundings, and a collection of stats and indicator bars to show the current state of your characters. Each of the four adventurers can be selected one at a time, so you can examine their possessions.

Your party starts with basic skills in combat and spell-casting which can be increased as they gain experience. It's a shame effort wasn't directed towards a more-detailed character system, allowing you to choose adventurers and equipment. The view of the corridors and rooms of the dungeon is very impressive, with a combination of well-drawn stonework and excellent programming, which maps these graphics onto the walls.



A swift potion is just the job after a battle



Hmm... methinks this could be a combat situation coming up

This 3D texture-mapping is similar to that used in *Wolfenstein* on the PC, although in *Dungeon* the speed and smoothness of the scrolling and light-sourcing used is highly superior. If you have an Arm3 fitted, a special mode can be selected to enhance the frame rate even more. A nice touch is the fading of the light as your torches burn down.

Various sounds are used throughout the game and although they are not particularly original, they do use proper stereo. It would have been nice to hear the approaching footsteps of the monsters; instead, the sounds are limited to grunts and screams, and samples to indicate when doors are opened or closed. The layout of the dungeon is well designed, with sliding doors, portcullises and even teleporters to add to the interest.

Simple puzzles have been implemented, requiring keys to be found or combinations of buttons to be pressed before progression to the next level. The many rooms are well-populated with a wide variety of monsters, some particularly hard to deal with.

Strangely, given the quality of the dungeons, the other graphics are poorly-drawn, taking on a cartoon-like look. To spend so much effort on a smooth and well-coded game, then spoil it with poor graphics is sadly an all-too-familiar scenario. Despite this, the game has been put together skilfully. And as *Dungeon* is the only real role player available on the Arc, this one has to be a must for anyone into adventure games.

Paul Wheatley

Techniques

Combat with monsters involves clicking rapidly on the weapon attack icons, and throwing anything you're carrying at the enemy. As well as the usual food and water, the odd potion comes in handy after a fight.

An arrangement of pressure pad-activated portcullises forms one of the many puzzles to solve.





A frighteningly badly-drawn giant rat assaults Anthea.

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XENON 2



Supplier: Gamesware
Tel: (0703) 456523
Machine: Risc OS
Price: To be announced

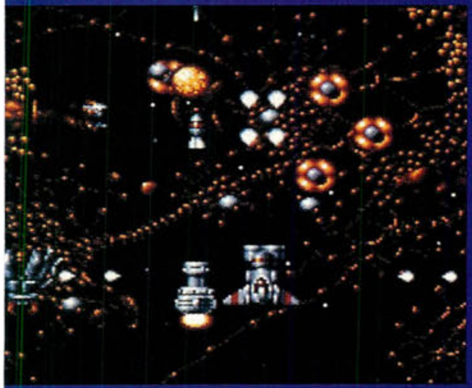
So was it worth the wait? When *Xenon* was issued it was billed as the greatest ever scrolly shoot-em-up in the universe. Finally, after four years, here it is for the delight and edification of the long-suffering Acorn ghetto-dwellers.

Xenon has the virtue of rapid familiarity – no messy learning curve here. You just get down straightaway to doing what comes naturally: blasting the living daylights out of a varied collection of alien scumbags, coming at you in squadrons as you scroll by a bizarre and threatening landscape. As befits anything produced by The Bitmap Brothers, this simple theme is handled with consummate style. The usual sort of rather vague justification exists for this exercise in mayhem.

Bad guys, the Xenites (returning from their star appearance in cult classic *Xenon 1*) are aching for revenge, so they've gone in for time travel, planting five bombs throughout history, threatening civilisation as we know it etc, etc...

So it's up to you, armed with your trusty Megablaster (small spacecraft) to travel through each of the five historical levels, clearing up the meanies, and dispatching the end-of-level guardian to defuse the time bomb.

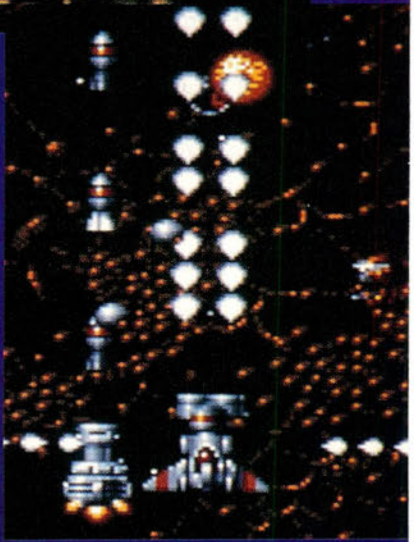
Scrolling is generally upscreen, although this game is a pleasant change in some ways: if you make a mistake you can scroll backwards, albeit slower than normal.



The accent is on heavily biomorphic imagery. You start off in the Palaeozoic period. Must be – where else do you run into laser-spitting trilobites and formation-dancing brachiopods?

Most deadly on this level are tube-dwelling worms; their many segments lead a semi-independent existence so they're very hard to kill.

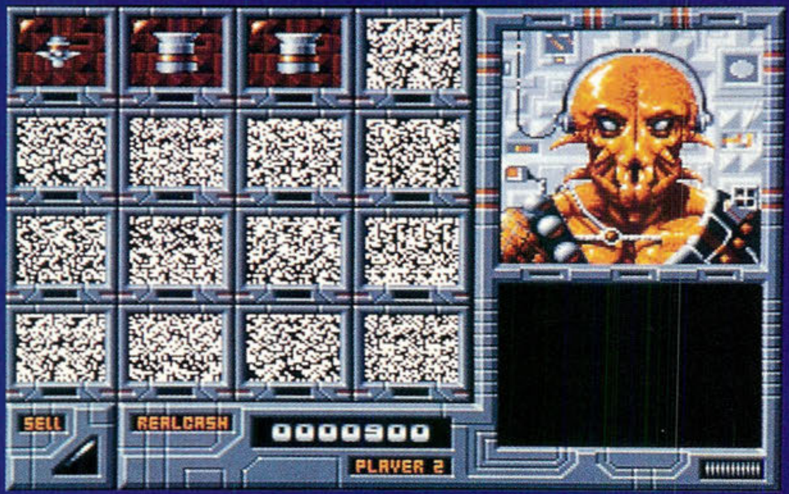
In the midst of this you're running the gauntlet of energy bolts emitted by homicidal coral-type things on either side of the screen. There's plenty to do here all right. Of course, it's not all work, work, work. You can take time off from mass destruction to go shopping. Collectables include cash, which dying monsters kindly leave behind, and pods which, if shot at, reveal some useful add-ons to enhance the lethality of your battlecraft. Besides the two little hearts, which restore your ship's shields to a greater or lesser extent, there is the Side Shot, which lets you fire off to left and right, the Rear Shot (guess), the Power-up, which increases the size of your shots and the Electroball, which is a sort of high-tech half-brick – sweep the screen bashing everything in your way.



Besides this, you get a speed-up to get you over some of those tricky patches faster, an auto-fire feature that fends off repetitive strain injury and a dive module that allows you to dodge everything. If you don't find all this stuff in the game, never fear. You get to visit a shop staffed by a gruff alien, where you trade your cash for killer goodies. Besides hardware, you also get advice on your strategy.

Xenon 2 is an elegant and beautifully-designed example of its genre. Besides being great to look at, it delivers screen after screen of smooth, breathless action.

Simon Webster



Xenon 2's answer to Alf Roberts

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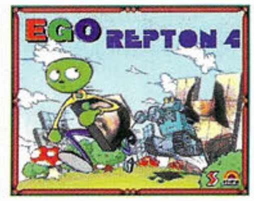
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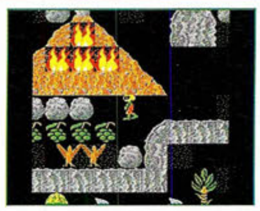
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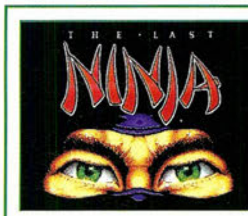
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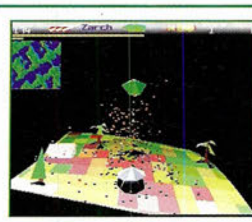
"There's a great big nasty at the end of each level. The solution is never a matter of fighting, it always requires some astute thinking. The Last Ninja is a great game – go silently and leave no witnesses."
...Micro User (Aug. 92)

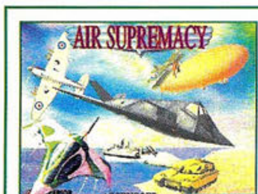
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...BBC Acorn User (Dec. 91)

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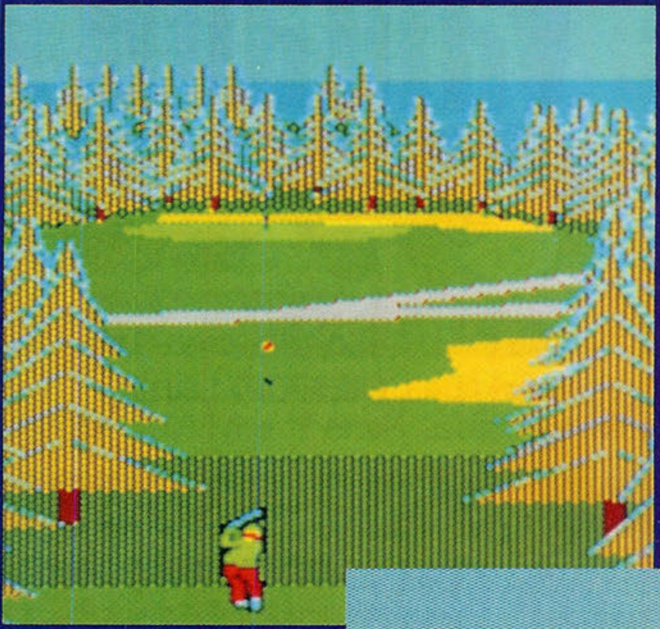
Play It Again Sam 18 follows the Superior tradition of bundling three 'old' games together with an 'All New' superior game.

The four titles on PIAS18 are golf simulator *Holed Out* ; 3D racing game *E-Type*; sideways scrolling shoot-em-up *Nevryon*; and *Citadel 2*, sequel to the popular *Citadel*.

Holed Out is a full feature golf game. There is a choice of two courses, two play modes, and four skill levels. The skill levels affect what hazards are active, these include bunkers, trees, water and wind; so just about every hazard and variable you'd expect to encounter for real on the fairway has been included.

Given the limited range of colours in screen, it is amazing just how colourful the game screen is.

I think I'm right in saying that *E-Type* is the only 3D racing game on the BBC to feature other cars, roadside



Holed Out: A full golfing game

scenery, on-road hazards, bends and hills. It is amazing to see a 6502 battling away with itself to produce realistic motion at the speed *E-Type* manages. Again, the colour is excellent given the limitations.

Nevryon is still the only eight-bit 'R-Type' shoot-em-up complete with four levels, two stages, three speeds, five skill levels, end-of-level guardians, weapon power-ups, moving aliens, ground-based defences and, what really matters, lots of destruction! Yet again, excellent use is made of the limited colours available.

Citadel was one of my favourite eight-bit games, so it is very interesting to see a sequel. The plot is the same as the first – take the five gems to the



On the road again with E-Type

transporter – but the puzzles seem an awful lot harder.

The solution covers three sides of A4. As before, keys have to be found to open doors, objects located and used to solve the many puzzles and, most trickily, the secret passages found to reach more parts of the fort.

There are 150 screens in total, so if you're a puzzle fiend *Citadel 2* should keep you busy for many a long night.

Dave Lawrence



Mass destruction with Nevryon

XENON 2 COMPETITION

If you've played the first level of that hard-playing fast-scrolling classic, Xenon 2, featured on our cover disc, you're bound to want the full version. So here's the good news. In association with Gamesware, we will be offering not one, not five, not ten, but no less than 20 copies of the game to winners of this month's competition – £500 worth of software.

All you have to do is answer the following three simple questions based on the game and send your entries to:

GamesWare, Unit 26, The Bartletts, Hamble, Hants SO3 5RD.
The first 20 correct solutions out of the hat will receive copies. If you already own Xenon 2, GamesWare will give you a refund.

1. Xenon 2 features a soundtrack provided by which chart band?

A Utah Saints **B** Bomb the Bass **C** Take That **D** REM

2. Besides being the name of the game, Xenon is a member of the family of gases known as... ?

A Natural **B** Neutral **C** Noble **D** Negative

3. In the game, why is it necessary to off the Xenites?

A They smell **B** They are Commodore Amiga owners
C They've planted time bombs **D** The UN said we should

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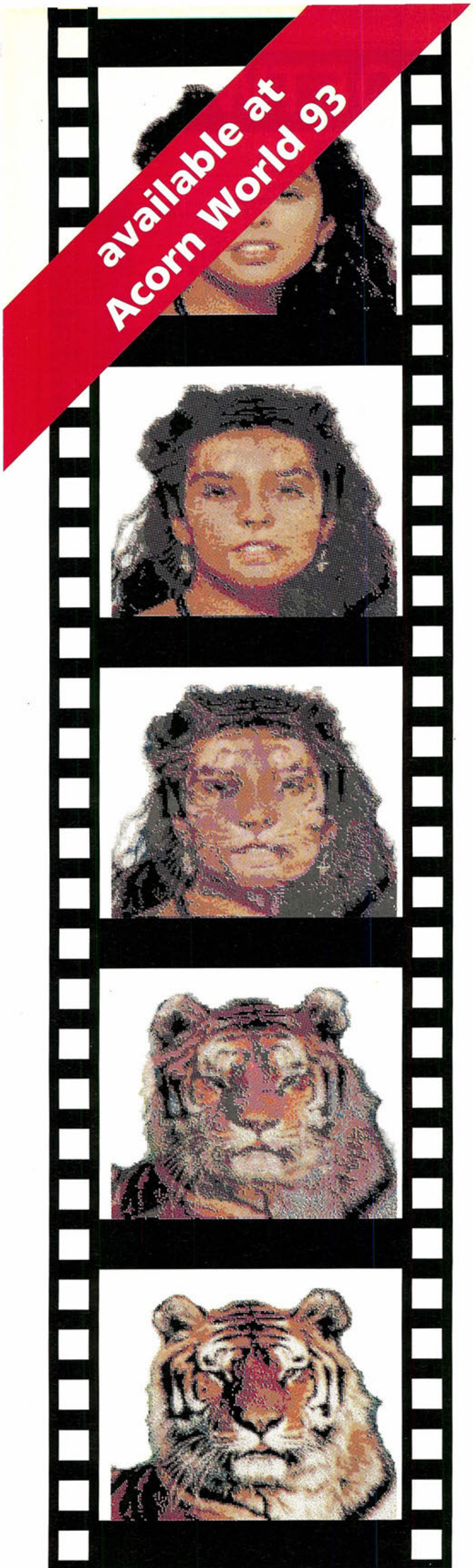
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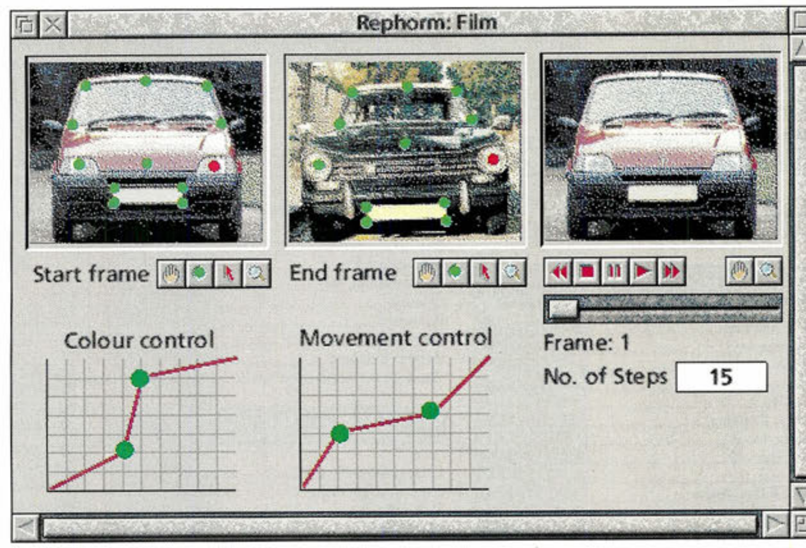
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Back to basics

Entering and printing, input and output. Having got the basics out of the way, Mark Moxon gets down to the serious stuff and invites you to converse with your computer

Last month was a killer: no doubt about it. Variables are fundamental, but unfortunately not terribly interesting. *This* is where the fun starts, so tighten your seat-belt, and prepare to learn how to talk to your computer.

Input and output

Before talking about more variable operators (as promised last month) let's have a look at entering and printing, input and output. This is the crunch: there's not much use for a computer which can't communicate with its lord and master.

You've already seen the `PRINT` command in action for printing out variable names. Well, there's a lot more to it than that, so let's do a little experimenting. The `PRINT` command is followed by a list of items to print: these items can be strings, variables or expressions, and they are separated by so-called print formatters: the latter simply determine how the items are shown on screen.

Right, now for some action. Type in and run Listing 1. The first thing you'll notice is that the screen mode changes to Mode 0. If your monitor can't display Mode 0, change the number in line 4). This mode change is done by the `MODE 0` command, and I've put it in so we can see the results of printing more clearly.

Printing in detail

Line 5 and onwards contain various `PRINT` commands, with each line showing off a particular print formatter. Here's a line-by-line description of what's going on: lines 5 to 9 deal with printing strings, and lines 12 onwards with numbers.

LINE 5 shows the semi-colon in action. If two items are separated by a semi-colon, they are printed one after the other on the same line, so `PRINT "1";"2"` does exactly the same as `PRINT "12"`.

LINE 6 contains a comma. If you've used a wordprocessor, you'll be familiar with the concept of tabs: every ten spaces (or whatever).

A comma in a `PRINT` statement means 'move to the next tab position to print the next item'. The default tab position is every ten characters, so the example prints the word 'comma' every ten characters along the screen.

LINE 7 uses an apostrophe. This is an easy one: it means 'move onto the next line'. This is similar to pressing RETURN in a wordprocessor.

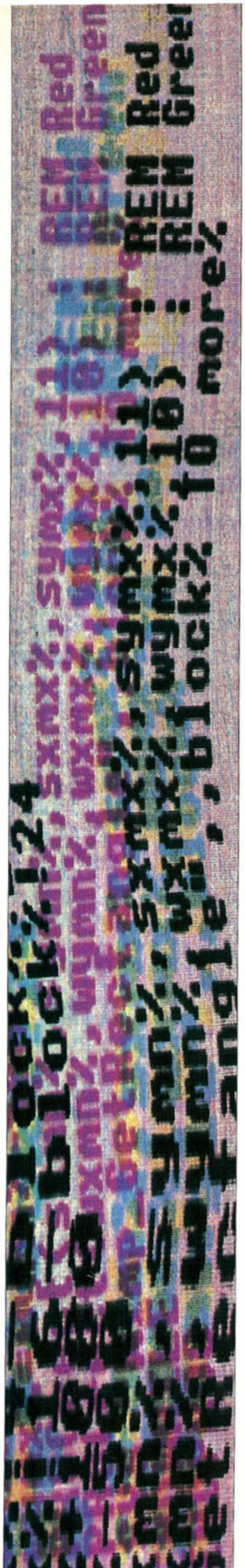
> **'This is where the fun starts, so tighten your seat-belt, and prepare to learn how to talk to your computer'**

LINE 8 introduces the `TAB` operator in its simplest form. The `TAB(17);` part means 'move along to the 17th character position along this line, and print'. Simple.

LINE 9 shows the `TAB` opera-

Listing 1

```
REM >Listing1¶
:¶
ON ERROR REPORT:PRINT " at line ";ERL/10:END¶
MODE 0¶
PRINT "Semi-colon ";"Semi-colon ";"Semi-colon "¶
PRINT "Comma ","Comma","Comma"¶
PRINT "Apostrophe "'"Apostrophe "'"Apostrophe "¶
PRINT TAB(17);"Tab to 17 spaces"¶
PRINT TAB(17,15);"17 across, 15 down"¶
:¶
var=123.45¶
PRINT '"Variable value is ";var¶
PRINT "Commas",var,var¶
```



String operators

Operator	Description
ASC("c")	Evaluates to the Acsii code of the character c. Every letter has a unique number, and this works it out.
CHR$(n)	Takes the number n and returns the character which has Ascii code n. If it helps, the following is true: `CHR$(ASC"c"))="c"`
LEFT$(s$,n)	Returns the leftmost n characters of the string s$, so `LEFT$("12345678",4)` evaluates to `"1234"`
MID$(s$,m,n)	Returns the segment of n characters from the middle of a string, starting from the mth character. Therefore `MID$("12345678",2,5)` evaluates to `"23456"`
RIGHT$(s$,n)	Returns the rightmost n characters of the string s$, so `RIGHT$("12345678",4)` evaluates to `"5678"`
STRING$(n,s$)	Evaluates to a string made up of n consecutive copies of s$, so STRING$(10,"Aa") gives "AaAaAaAaAaAaAaAaAaAa"

tor in its meanest form, with two numbers. Putting `TAB(17,15);` in the `PRINT` statement means 'move to the 15th line on the screen, then move along 17 characters, and print'. Note that this form of `TAB` doesn't care which line you last printed on: it goes to a specific position on the screen and prints.

LINE 12 shows that you can include print formatters anywhere in the line; the apostrophe at the start of the line means 'skip a line', and if you look when you run the program, there is a blank line.

LINE 13 uses the good old comma, but this time with numbers, and there's a definite difference: notice how the 123.45s and the Commas don't line up vertically. This is because with numbers, the computer moves along to the next tab and then prints the number so that it *ends* at the next tab. If you look, you'll see that the 123.45s end just before the Commas start. Now to input.

Give me input

The only way we've been able to give variables values is to declare them in a statement like `var=123.45`.

That's fine if you know the values of all your variables in advance, but what if you need to ask the user for information? This is where the `INPUT` command comes in. Again, it's best to learn how by example, so type in Listing 2.

The `INPUT` command is, in its simplest form, simply followed by the name of a variable (this can be any name: it doesn't have to be the name of an existing variable). What this command will do is print a question mark, and will wait for you to type something in, followed by RETURN. The value you type in will then be assigned to that variable. So, when you run Listing 2, type in a number at the prompt (with a decimal point if you want) and the variable *var* has a value.

In this case the variable in line 6 is numeric, so if you type in something that isn't a number, you'll end with the value 0. Here's a look at the other forms of `INPUT`.

Listing 2

```
REM >Listing2¶
:¶
ON ERROR REPORT:PRINT " at line ";ERL/10:END¶
MODE 0¶
:¶
INPUT var¶
PRINT "You typed: ";var¶
:¶
INPUT "Give me a number " var¶
PRINT "You typed: ";var¶
:¶
INPUT "Give me a string " var$¶
PRINT "You typed: ";var$¶
:¶
INPUT "Question mark",var$¶
INPUT "No question mark " var$¶
INPUT TAB(17,15);"Middle of screen " var$¶
INPUT "Lots of variables " var1,var2,var3¶
PRINT "Values: ";var1;" ";var2;" ";var3¶
```

LINE 9 shows how to include prompts: just put the prompt string before the variable name. This prompt string can include all print formatters for `PRINT` above.

LINE 12 shows how to input strings, in this case into the variable var$.

LINE 15 has a comma after the prompt string, which appends a question mark to the prompt. Line 16 doesn't have the comma, and doesn't have a question mark added.

LINE 17 shows `TAB` in `INPUT` statements. It behaves like `TAB` in `PRINT` statements: this line prints the prompt on the 15th line, 17 characters in.

LINE 18 has a list of variables, rather than just one. When this line is executed, the prompt appears. If you enter one value, a question mark will appear, waiting for the second value, and then the third.

You can enter all three values in one, by separating them by commas.

Enter `1,2,3` then RETURN, and var1, var2 and var3 will be assigned values of 1, 2 and 3, in one go.

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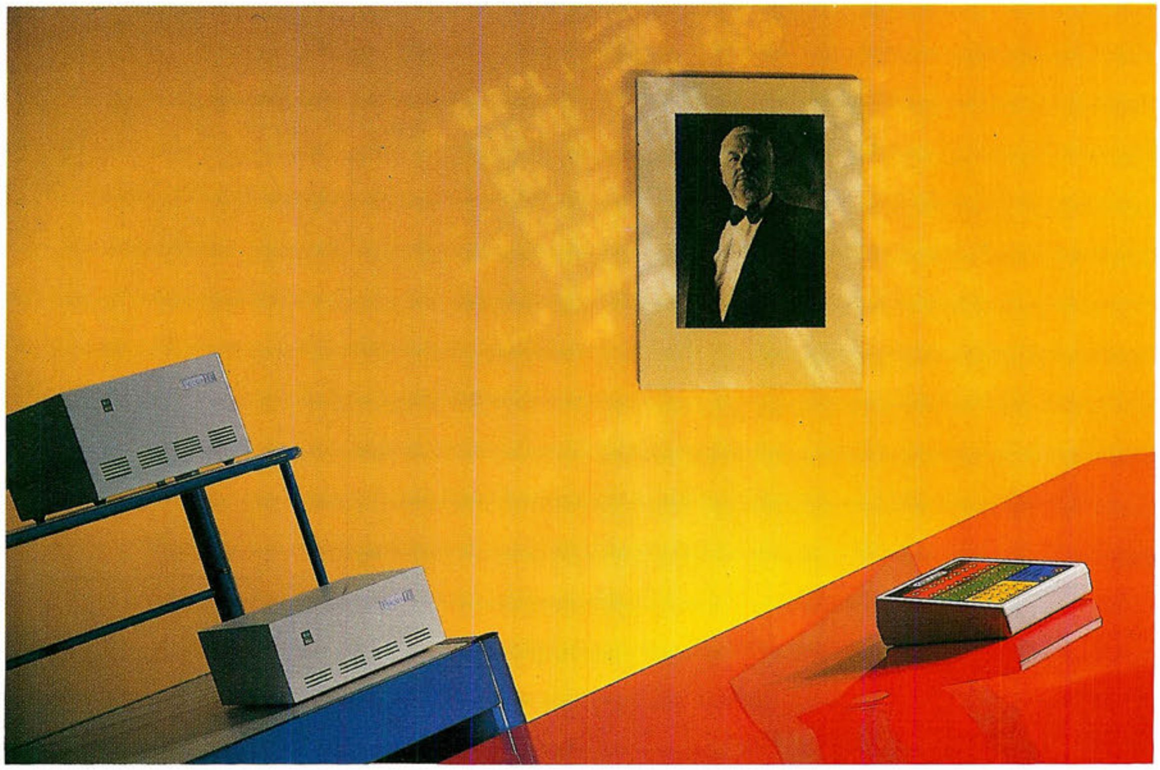
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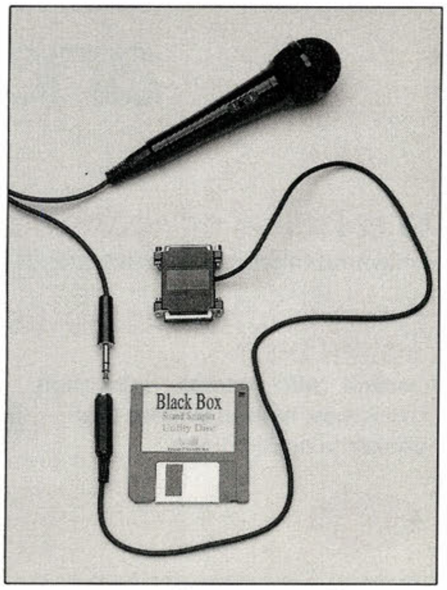
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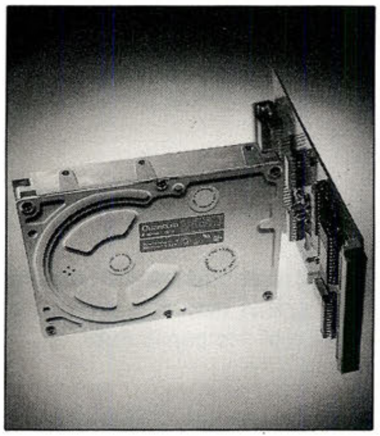
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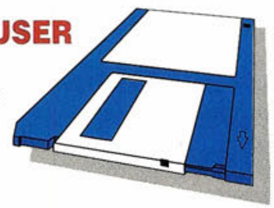
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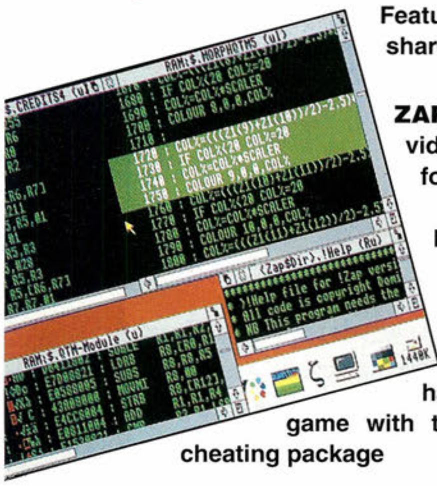
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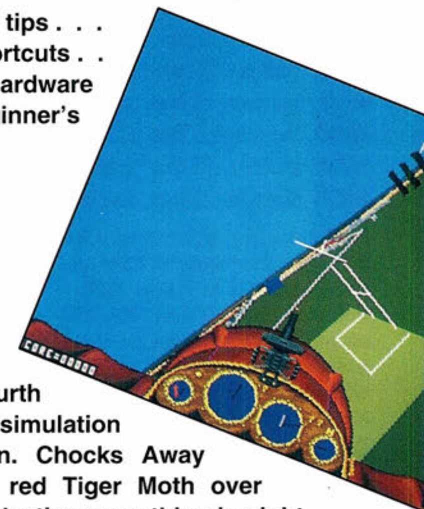
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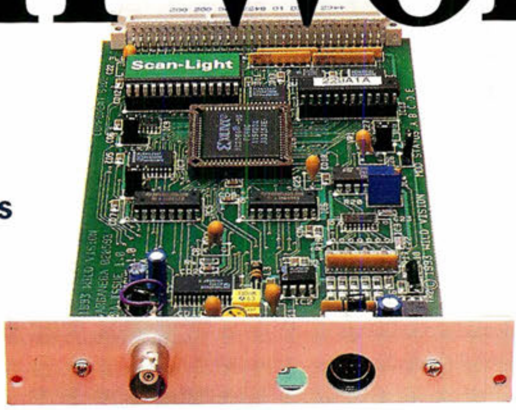
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How to learn Basic. Running sprites in an application. Those are the questions, here are the answers

QUESTIONS & ANSWERS

Q I am an Archimedes user and I am eager to learn how to program my computer. Is there any book which provides a tutorial in Basic programming. At present I have no programming skills, so I would need to start right at the beginning.

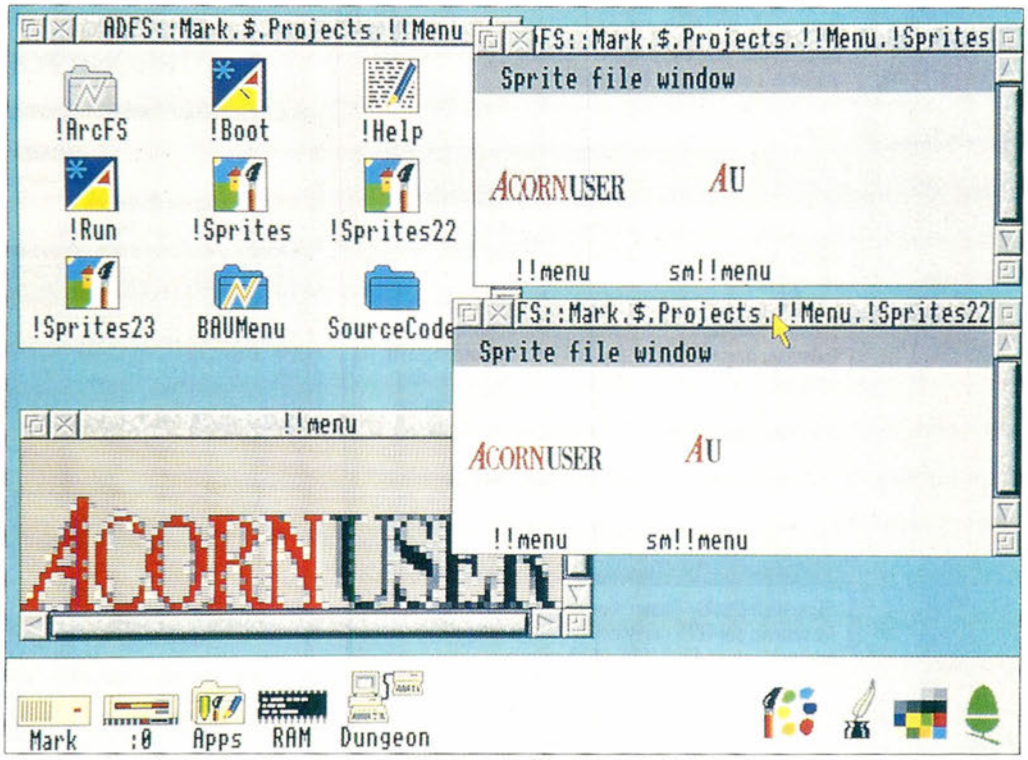
D Habbershaw
Derbyshire

A **Unfortunately the 'easy Basic tutorial' book market seems to have been left unexploited since the Archimedes was launched.**

The main reference book on the subject of Basic V (the version of BBC Basic which is supplied with Risc OS) is Acorn's *BBC Basic Guide*, which costs £19.95. This is supplied with some Acorn machines, but not all, and is really a comprehensive reference manual rather than a tutorial. The early sections introduce the main concepts, but are only of use if you can already cope with programming in general.

One Basic programming book, which sounds like it ought to be just right, is *Basic V* from Dabs Press. This book is not a tutorial on how to use Basic V, nor a complete reference work: instead, it describes those features of Basic V which were not present in the eight-bit versions of the language, and as such is aimed at those who are upgrading from a BBC and who already know Basic IV. If you know nothing about Basic already, it's a pointless buy.

So how should you learn Basic? Well, there are a few options. First, you can follow the programming course in *Acorn User*, our new 'Back to Basics' series (apologies for the outrageous plug there). Second, you can invest in a general Basic tutorial book (such as the classic *30 Hour Basic* for the BBC) and then buy *Basic V* to bridge the gap onto the Archimedes. Finally, you can take the gamble and get the *BBC Basic Guide*, which you really should buy anyway if you're planning to program in Basic: though don't say you haven't been warned.



Okay. So you've designed a miniature masterpiece. Now see how you can add the sprite to your applications

Q I refer to your recent article 'Icon Class', in which Jack Kreindler instructed readers how to create their own icons.

It was very interesting, but what I need now is an article to tell me how I can get these sprites to run in an application, or appear where I want them. I think I'm getting the icon-designing bug.

C Woolf
Betws-y-Coed

A **Applications are simply directories whose names begin with an exclamation mark. The various files stored inside these directories were described in 'Absolute Beginners' in the June 93 issue, but let's concentrate on sprite files.**

Each application directory should contain at least one sprite file, with the name *!Sprites*. This contains at least one sprite, which has the same name as the application; so, for example, if your application directory was called *!MyApp* then the sprite in the *!Sprites* file should be called *!myapp* (note that sprite names are always in lower case). Traditionally the sprite is in Mode 12, with a width of 34 pixels and a height of 17 pixels.

Whenever a directory is opened which contains an application, the Filer looks inside the application directory for a file called *!Sprites*: if there is one, it loads this sprite file into the Wimp sprite pool, and this icon is used for that application in the directory display.

You can also have files called *!Sprites22* and *!Sprites23*: these contain high resolution sprites with a width and height of 34 pixels. The first file contains Mode

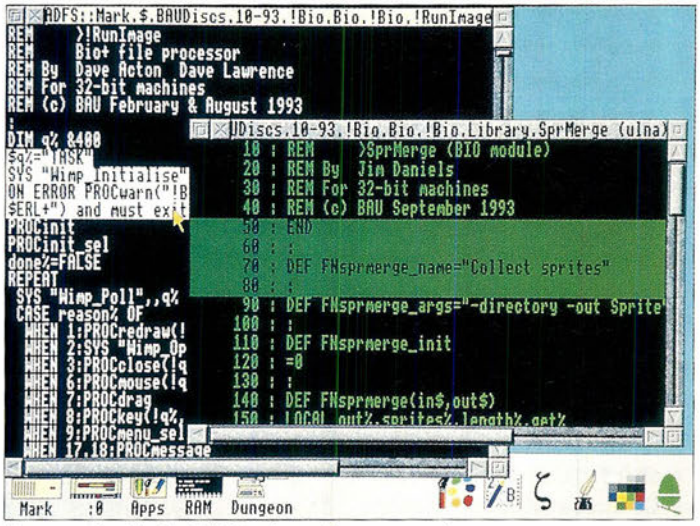
20 sprites (hi-res colour), and the second Mode 23 (hi-res monochrome). The correct file will be loaded depending on which monitor type you have configured.

One final addition is that you can have sprites in these files which will be displayed when Small icons or Full info is chosen in the Filer menu.

These should have the name *sm!myapp* (for example) and should be half the resolution of the normal size icon (17 x 9 or 17 x 17 for low-resolution and hi-resolution respectively).

If you want your sprites to appear in other places, then that's not too hard to achieve either. All you have to do is load any sprite files which live inside an application simply by double-clicking on the application with SHIFT held down, then loading up the sprite files, altering them and re-saving them.

Never try to do this on your master copy, ensure you make a backup first. If you do own a template editor, then you can also alter the sprite references in the template files to achieve icon changes.



Programming in Basic V; the Acorn User approach

Q The other day I was working on an important *Draw* file, and having made some major changes, I then saved it under a new name by tacking the digit '1' onto the end of the filename.

To my horror, I found the file was saved over the original one, removing the old copy which I still needed.

Too late, I realised that the original filename was ten characters long, and adding the digit made it 11. Why didn't I get an error message, and is there any way I can prevent this from happening again and losing any more files?

B Edwards
Cheshire

A There is a new configuration setting in Risc OS 3 called Truncate. If this is set to On and a filename is longer than ten characters, it chops it to ten characters then saves; so, if you are in the habit of saving backups by tacking extra characters onto filenames, be careful not to overstep the mark. However, if the setting is Off, the Filer will complain at the length, and you will not be allowed to save.

The main use for Truncate is with filing systems which cannot cope with ten-character filenames, such as Dos and DFS. In Risc OS 2 you renamed your files to make sure they are eight characters long, but now they are truncated automatically.

UPDATE

H J Henson from Kilmarnock has written in response to M Cheeseman's question in the July issue, regarding removal of stubborn files from a hard disc. If you *move* files (by copying with SHIFT held down) into a Ram disc, the files disappear from the hard disc: you then delete them from the Ram disc. A cleaner approach is to press F12 and type:

`Filer_OpenDir null:$`

followed by RETURN twice. This opens a directory into which you can move files, and they will be eaten up – like a dustbin. Use with care: once you've copied something into the null window, you won't get it back.

Customer hotline

This month's column is wholly devoted to hints and tips for the Acorn Pocket Book

A-Link

We have had reports of difficulty establishing a connection between an Acorn Pocket Book and an Acorn computer using the A-Link. I have used an A5000 as an example below, but this applies equally to any Risc OS computer with a serial port.

Difficulties can arise when a previous transfer has failed. In extreme circumstances you may find it necessary to reset the Pocket Book completely. This has the effect of releasing any files which have been stuck in an open state and so therefore cannot be opened by another program.

If you are experiencing difficulties transferring files, the sequence below should always work:

1 Ensure there is at least 50K free memory in the Pocket Book so that there is sufficient free memory for temporary storage of files being transferred; then switch the Pocket Book off.
2 Plug the A-Link into the A5000, then power-up the A5000 so the A-Link detects the A5000 serial connection starting.
3 Load PocketFS on the A5000.
4 Connect the A-Link at the Pocket Book end.
5 Switch on the Pocket Book, and set Remote Link to 'on' at 9600 to ensure that the remote link is enabled, and operating at the right speed. The Remote Link setting can be reached directly by keying Acorn-L.
6 Click on the PocketFS icon on the A5000 to open the connection.

Similarly, here is a recommended sequence for closing down the connection:

1 Select Dismount on the PocketFS menu to close the connection and any open files.
2 Turn off Remote Link on the Pocket Book to close the connection at the Pocket Book.
3 Quit PocketFS on the A5000.
4 Switch off the Pocket Book.
5 Remove the A-Link from the Pocket Book and the A5000.

Battery Life

Using the A-Link puts quite a strain on the batteries in the Pocket Book, with a consequent reduction in their useful life. If you use the A-Link frequently we recommend you also use a mains adaptor to prolong battery life.

The power control within the Pocket Book is designed to progressively power-down components as the battery runs out. This ensures it will alwats have enough battery power, so that the really critical areas like the memory holding your data survive the longest.

The A-Link is among the first things to be shut down if the battery cannot cope; this can often lead to the impression that the A-Link is faulty. Try again with a fresh set of batteries or, better still, a mains adaptor connected.

After the A-Link has been shut down any SSD devices (such as the Spell program) will be next. Only once these have been disabled will the Pocket Book shut itself down.

If the A-Link has to be shut down during a transfer it is possible that files will be left open.

Less power is used when the Pocket Book is idle than when it is performing some computation, but you should still switch it off when it is not going to be used for a time. This will further minimise battery power wastage.

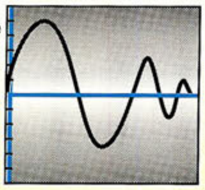
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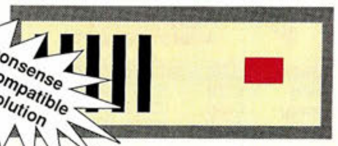
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Hard Discs

IDE



The no nonsense RISCOS 3 compatible HardDisc solution

The following are complete systems comprising of the NEW Desktop Projects IDE interface, hard disc, mounting brackets, cables, utilities disc and manual. **RISCOS 3.10 or later required.**

Archimedes 3.5" Internal
Not suitable for A3k,A3010-A3020

120Mb 16ms Cache	£250
170Mb 16ms Cache	£300
250Mb 13ms Cache	£350
330Mb 12ms Cache	£Call
520Mb 12ms Cache	£Call

A3000/Archi/A5000 External

120Mb 16ms Cache	£320
170Mb 16ms Cache	£370
250Mb 13ms Cache	£420
330Mb 12ms Cache	£Call
520Mb 12ms Cache	£Call

DTP IDE Disc Controller £79
Complete with cable, guide & disc
Works with Conner, Quantum Samsung, Maxtor & Fujitsu.

A5000 Second/Exchange Drives

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170Mb 11ms Cache	£250	£200
250Mb 15ms Cache	£350	£300

HCCS A3000 IDE Hard Cards

20Mb Internal+User Port	£189
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80Mb Internal+User Port	£319
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HCCS Ultimate Multi-Podules

With IDE Hard Disc	A3000	A3010
20Mb Internal	£239	£229
60Mb Internal	£319	£309
80Mb Internal	£359	£349

2 Multipodule slots are provided on the A3010 and 3 slots on A3000

SCSI

The following are complete hard disc systems comprising of a Morley SCSI uncached interface, hard disc, brackets, cables, utilities disc and manual.

Archimedes Internal
Not suitable for A3k,A3010-A3020

120Mb 18ms Cache	£395
200Mb 18ms Cache	£545
330Mb 12ms Cache	£Call
520Mb 12ms Cache	£Call

A3000/Archi/A5000 External

120Mb 18ms Cache	£475
200Mb 18ms Cache	£625
330Mb 12ms Cache	£Call
520Mb 12ms Cache	£Call

The above are ext units with card.

SCSI Controller Cards

Morley Uncached	£139
Morley Cached	£179

CD-ROM Multimedia

Acorn Multimedia Expansion System £499
Comprises A4000 style case complete with power supply, SONY multi-session CD-ROM drive, pre-amplifier with headphone/phono inputs/outputs, CD caddy, etc. The unit can also house a 3.5" SCSI hard disc and another CD-ROM drive or Magneto Optical SCSI drive.

External Toshiba CD-ROM Drive (The fastest available) £399
The above drive is a triple spin speed unit and is PhotoCD compatible. The unit is housed in its own case with power supply and comes with one caddy.

Magneto Optical Drives (SCSI)

128Mb Magneto Optical SCSI Drive 28ms 1" high £699
The above unit is a bare drive and can be mounted in the spare floppy bay of an A5000 or in an external case for other machines. SCSI interface extra.

External case for above	£69
128Mb Blank Discs	**£39**
A5000 Econet SCSI Interface	**£49**

Add £139 to above prices for Morley SCSI Interface.

Archimedes, A3000, A5000 Software

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Access VISA SWITCH

OCT 93

Not so baby Bio

Another two modules for Bio. Something to merge sprite files and one to decode relocatable modules. How big can this thing get?

Over the last few months Bio has been building up into a suite of modules to enable you to get more out of your Arc. We have incorporated quickies to protect your files, to wipe them again, to convert text files to *Draw* files, and a lot more. This month we have one to decode relocatable modules, and one to merge your sprite files.

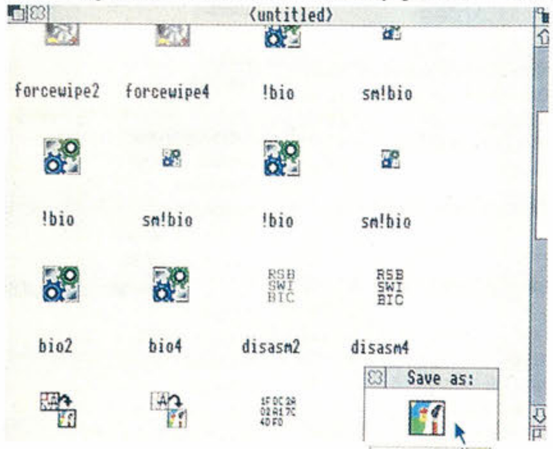
Sprite Merge

This is the first of a pair of *Bio* modules from Jim Daniels of Manchester, and the name is pretty self-explanatory. It takes a directory as input and merges all sprite files found therein into a single file; this is the output.

One very useful purpose of this utility is to gather together all the *Bio* module sprites and save them as a single sprite file (called *Biospr* say) inside *!Bio.Library*. Remember that *Bio* isn't bothered about where the sprites for its modules are, as long as it comes across them somewhere in *Library*. Putting them in a single file speeds up initialisation considerably. The same goes for template files by the way.

For those interested in how this module works, the directory flag is used in *FNsprmerge_args* to tell *Bio* that directories are suitable as input. The new call FNclaim_memory is called to grab all the available memory prior to scanning the directory. 32 bytes of this are used for the OS_GBPB call which scans a directory. The rest is used to copy individual sprite files onto the end of the merged file in the biggest possible chunks.

OS_GBPB 10 is used to examine a directory – if a sprite file is found it is merged; if a directory is found then PROCsprite_scan recurses.



All together now: save on initialisation time by putting sprites in the same directory

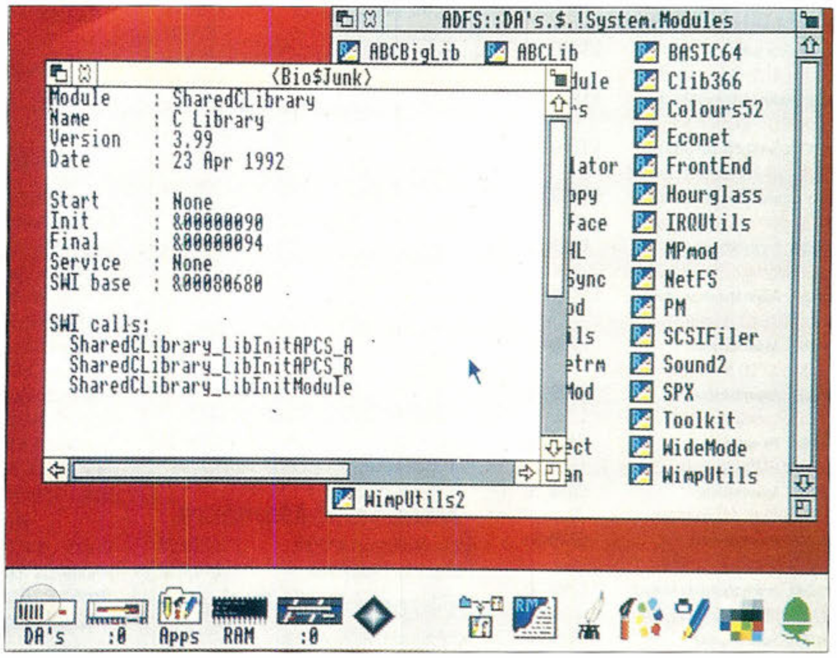
Module Info

Jack's second offering decodes relocatable modules, spitting out a text file telling you all about them. Like *SprMerge* the new FNclaim_memory is called. Only 44 bytes of memory is required (to hold the module header) but it is good practise to use the call rather than DIM. Since only one *Bio* module can 'run' at once it is more efficient to use the common pool of memory where possible.

Only modules are allowed as input; the output is a text file which is sent to an editor if present. To examine a module just drop onto the icon (have a look in *!System.modules* for some examples). Alternatively, examine a module in memory by first saving with the **RMSave* command from Star Info July '93.

All the useful information about a module can be found in the header at the start. This contains pointers to name, help string, star command table, SWI table and so on.

Some intelligence is needed regarding SWIs. If a module does not support SWI calls the pointers to the SWI decoding table and so forth should be set to 0. In fact, they can just be left out and Risc OS spots that they are invalid because it finds machine code or unexpected data there). *ModInfo* does a quick check to see whether the SWI pointers are within the file.



All you ever wanted to know about your modules can now be divulged in an easy-to-read format. This month in *Bio*, ModInfo (shown above) enables you to take modules – the heart of the operating system – and investigate them further.

If you wish, for instance, to change the Pinboard module as we did in the August issue, by adding a desktop full of cockroaches – this application would provide you with vital information.

Using Bio

Bio is on this month's disc and as with all our previous Bio modules, the module programs are saved inside the !Bio.Library directory.

As usual, you can create your own sprites for Jim's modules, but some suitable ones are also provided on the Acorn User disc.

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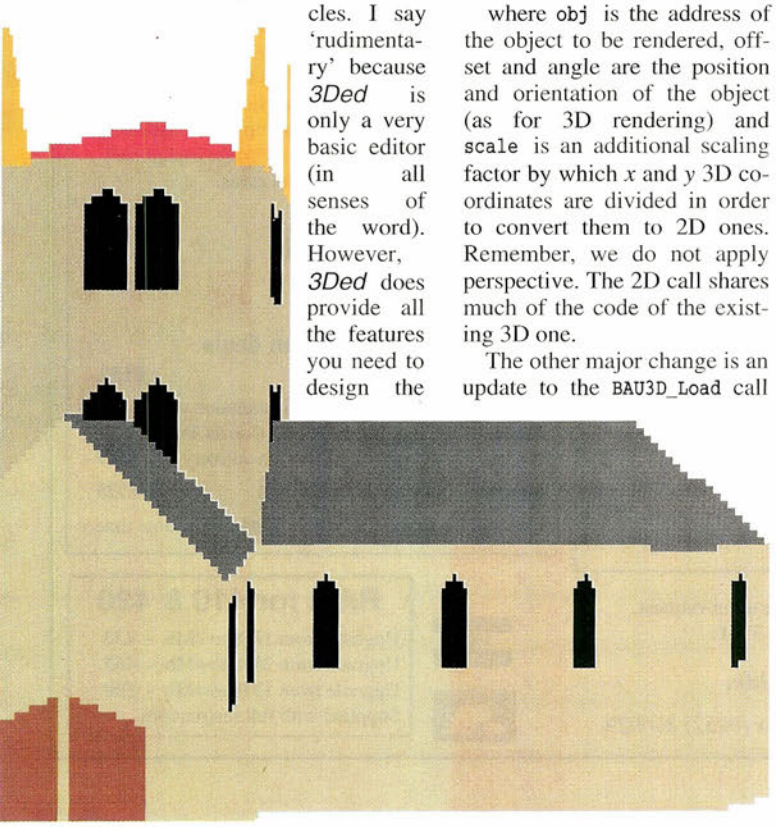
A new dimension

Dave Acton wraps up our 3D module with a new Load command and a handy addition that gives you 2D views of work in progress

Over the past few months we have built up a simple language to define 3D objects and scenes and a relocatable module to allow them to be displayed on the screen.

Although it is perfectly possible to define complex shapes and indeed, whole 'worlds' textually, it soon becomes quite difficult to image what's going on. Furthermore, testing whether you've got your co-ordinates correct can be a slow business – editing a text file, saving, running a test program to display the file and so on. What is needed is some form of 3D editor, which is what this final part is all about.

On the monthly disc you will find a rudimentary 3D editor called *3Ded*. Use it to create 3D scenes and save them in the textual format we have developed over these articles. I say 'rudimentary' because *3Ded* is only a very basic editor (in all senses of the word). However, *3Ded* does provide all the features you need to design the sort of scenes we have come across. *3Ded* is not a desktop application – you will have to wait for version II.



Upgrading

Our faithful *BAU3D* module needs a few small additions to provide all the facilities required by *3Ded*. You'll find version 0.40 (complete with source) on the disc. In particular there have been two major additions.

Firstly, *3Ded* displays not only a three-dimensional view but three two-dimensional 'flat' views of the object being edited – from the front, the side and above. These views are produced without perspective and a new SWI call is used to generate them:

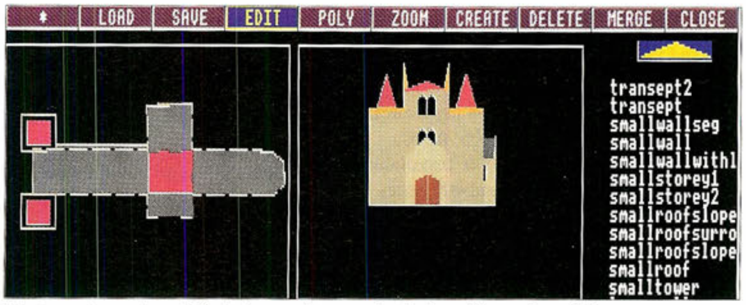
```
SYS" BAU3D_Render2D",
obj,offset,angle,scale
```

where `obj` is the address of the object to be rendered, offset and angle are the position and orientation of the object (as for 3D rendering) and `scale` is an additional scaling factor by which *x* and *y* 3D co-ordinates are divided in order to convert them to 2D ones. Remember, we do not apply perspective. The 2D call shares much of the code of the existing 3D one.

The other major change is an update to the `BAU3D_Load` call which takes two more (optional) parameters:

```
SYS "BAU3D_Load",file$,
scale,objlist,max
```

where `objlist` is a pointer to a table to be filled with addresses of each object loaded. `max` is the maximum number of objects there is space for (number of bytes divided by four). The original load command only returned the address of 'world' but our editor needs to know where all objects are stored so they may be edited and included in other definitions.



The two-dimensional 'flat' views of our cathedral enable easier editing

Using the editor

A set of instructions is on the disc, but here is a summary.

A menu is provided across the top of the screen. The main part of the screen is taken up with 3D and 2D views of the current object.

On the right of the screen (depending on mode) is a list of defined objects (which can be scrolled), colour selector (for colouring polygons) and so on.

Click on LOAD and a filename to load a 3D file - try our good old cathedral for a start. *3Ded* expects to find an *Objects* subdirectory. Select Edit mode and click on the name of an object with the middle button. Pan the view either by dragging with the middle button or altering the offsets (bottom of the screen).

To select a subobject click with the left button on it. If more than one is below the mouse, click again to cycle through. Alternatively, use CTRL S to go through all subobjects and polygons in sequence. Once selected, subobjects may be moved by dragging with the right button. Or alter the position and angles shown at the bottom of the screen. If you click on the first co-ordinate or angle you can type in the three values manually, for greater accuracy. Use the ZOOM options or CTRL Q and CTRL W to alter the scale of the views. CTRL A and CTRL Z move an object/vertex 'in' or 'out' of the screen.

Click on POLY to create a new polygon. Existing polygons may be stretched by their vertices – remember only convex polygons are allowed by BAU3D.

Improvements?

As always, there is plenty of scope for improvement with *3Ded* since it only aims to provide the basics.

I hope it will be of some use though, as a first step towards 3D design.

*INFO

Dave Lawrence and Dave Acton present their monthly mix of programs, for all Acorn users

STAR PROGRAM

VIBE ONE

Programs: ColTri
Description: Graphics demos
Author: Jan Vibe
Machine: 32-bit (Risc OS 3.1)

Three more goodies from the ever inventive fingers of regular contributor Jan Vibe.

The first, *ColTri*, follows on from our recent exploration of colours and dithering. It plots the now familiar red/green/blue triangle, but does so recursively. In other words, once the program is completed it returns to the beginning, starts over again and can continue *ad infinitum*.

The new Risc OS 3.1 dithering version of ColourTrans_SetGCOL is used to increase the range of hues available and we've slightly modified Jan's program so it recurses increasingly.

This means you can see all the joins being gradually smoothed out until a convincing RGB diagram is produced.

Recursion is typical of *INFO programs – each triangle, if larger than the current limit, is split into four and the process repeated.

DIRECTORY

Program: CSDmodSrc
Description: Desktop utility
Author: Carl Stockton
Machine: 32-bit

There are numerous programs around that enable you to set the Currently Selected Directory (CSD) from the desktop, but most clutter your iconbar with yet another icon for what is, after all, a very trivial task.

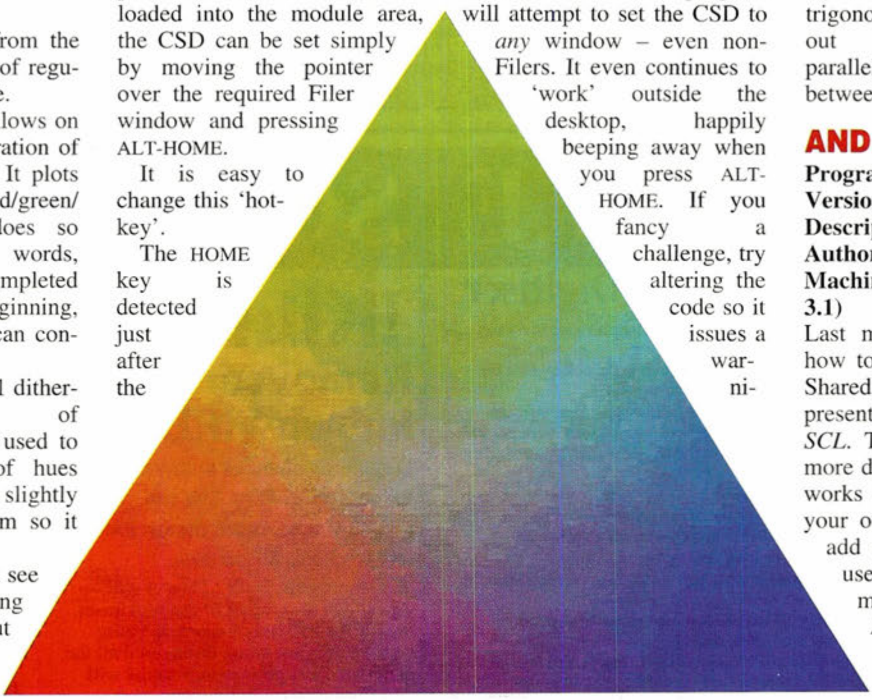
The *CSDModule* cures this problem at a stroke – once it is loaded into the module area, the CSD can be set simply by moving the pointer over the required Filer window and pressing ALT-HOME.

It is easy to change this 'hot-key'.

The HOME key is detected just after the start of .eventcode with `TEQEQ R2,#&20`. The constant is the offset from the top-left-hand corner of the keyboard of the key required (ESC=&00, F1=&01 and so on). If you prefer to use ALT-TAB, change this to &26. The ALT part is detected further on by `MOV R1,#256-3`. Here, -3 is the INKEY value of ALT. If you prefer CTRL, substitute 2.

As you quickly discover, the module beeps when activated. If this becomes annoying, remove or comment out the `SWI 256+7` near the end of .callback and re-assemble the program.

As it stands, the program will attempt to set the CSD to *any* window – even non-Filers. It even continues to 'work' outside the desktop, happily beeping away when you press ALT-HOME. If you fancy a challenge, try altering the code so it issues a warning beep should the window under the pointer not be a Filer window, or if the desktop is inactive.



The familiar red/green/blue triangle plotted using Vibe One

VIBE TWO

Programs: FatLines
Description: Graphics demos
Author: Jan Vibe
Machine: 32-bit (Risc OS 3.1)

FatLines is a useful demonstration of how to use the Risc OS 3.1 parallelogram-plotting calls to produce lines of a desired width.

PROCline takes two pairs of co-ordinates and a width. Circles are filled at each end of the line, and a small amount of trigonometry is used to work out the appropriate parallelogram to fill in between.

AND SHARE ALIKE

Programs: SWI04-SWI09, Version
Description: Utility module
Author: Dave Acton
Machine: 32-bit (Risc OS 3.1)

Last month we talked about how to communicate with the Shared C Library module and presented an example module: *SCL*. This month we look in more detail at how our module works and how you can add your own calls. We will also add some calls for you to use in your own Basic and machine-code programs.

As you recall, *SCL* is assembled in bits. Each new SWI is assembled by a program segment called *SCL.SWIxx* and each segment must contain the following functions:

FNswixx_name returns the name of the SWI

FNswixx_init assembles any initialisation code needed for that SWI (when the module is installed)

FNswixx_vars defines any variables and declares any workspace needed

FNswixx_code assembles the

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SCL_memcpy, SCL_memmove, SCL_qsort and SCL_bsearch. If you are familiar with C you will know what these do – if not, read on.

The calls SCL_memcpy and SCL_memmove are fast memory-copying routines. The former is potentially the fastest but requires that the area being copied from does not overlap with the destination. Both calls take three parameters like this:

```
SYS "SCL_memcpy",to,from,n
```

where n bytes are copied from from to to.

Two examples of higher-level functions are SCL_qsort and SCL_bsearch. The quicksort function comes as a standard part of C and SCL_qsort provides access to it.

The parameters needed are similar to those for the Risc OS calls OS_HeapSort:

```
SYS "SCL_qsort",n,base,t
```

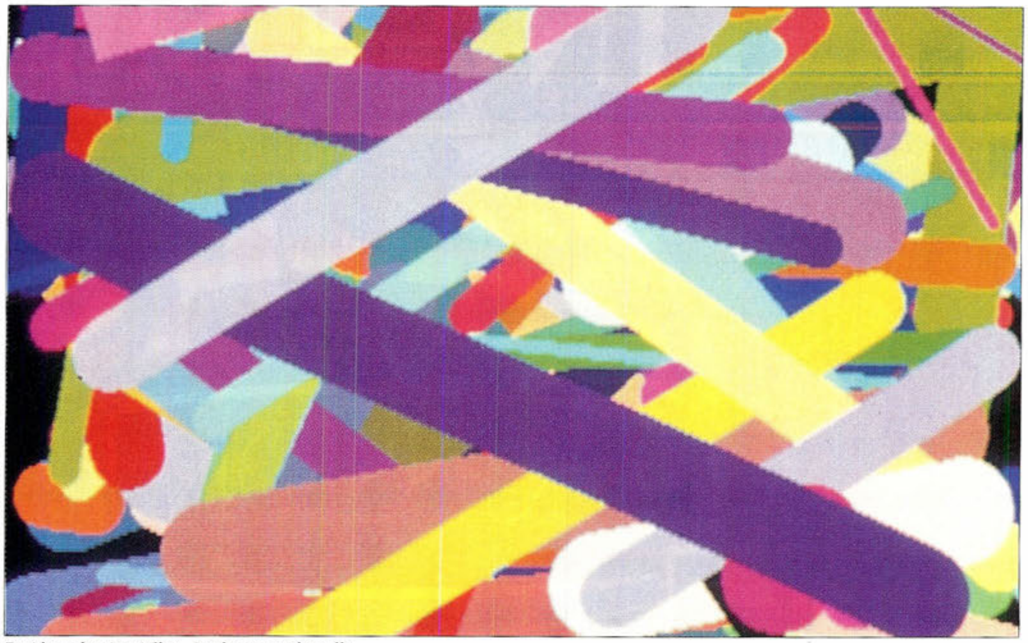
where n word-size objects are to be sorted. They are stored from base onwards and are of type t. t can either be a number in the range 0-5 (see figure 2) or the address of your own comparison routine. The type t has the following meanings:

0: Cardinal (unsigned integer)
1: Integer
2: Pointer to cardinal
3: Pointer to integer
4: Pointer to characters (case insensitive)
5: Pointer to characters (case sensitive)

Unfortunately (or maybe fortunately) the OS_HeapSort call is very efficient and, because of the overheads involved, is much quicker than SCL_qsort. Nonetheless, it is a useful example and much of the code required is shared by SCL_bsearch below.

SCL_bsearch takes the same first three parameters as SCL_qsort plus one more: the key to search for. It returns a pointer to where the key was found, or 0 if it was not.

A binary search is used: so the array is repeatedly divided in two till the key is found. If there is more than one match it is not defined which of these will be returned.



FatLines by Jan Vibe. Aptly named really

How it works

C is well-behaved regarding workspace. A stack made up of chunks is maintained and extended whenever a C function spots that space is running out. Therefore, much of the initialisation routine for our *SCL* module is standard code for setting up the stack ready for calling C functions. The same goes for the SWI handler. By the time the code in *SWI00*, *SWI01* and so on is called, everything is set up ready for communication with the C library.

Workspace is claimed using OS_Module 6 for two reasons. First, certain values need to be stored somewhere, including 'relocation offsets' which will be needed later to set up the stack ready for calling our SWI routines. Also, workspace is needed for 'static' C data.

Adding new Swis

To add a new SWI call is pretty easy – just follow the examples given. There exists a standard (called the Arm Procedure Call Standard) which defines how individual routines (compiled by C or other languages) should behave, what registers they use and so on. There simply isn't space here to go over the APCS in detail, but it is worth mentioning a few key points so your code is legal.

Under the APCS registers, r0-r3 (called a1-a4) are junk registers and may be corrupted. They are used to pass up to four parameters to subroutines and a1 is used to return single values. Registers r4-r9 (called v1-v6) are known as the variable registers and may be used, but should be preserved.

Registers r10 and upwards are 'special'. Aside from the usual sp, link and pc, r10 is used as the current stack limit (for checking when space is running out) and r11 is the 'frame pointer' which is used to keep track of the chain of outstanding subroutine calls. Needless to say, avoid these registers and your routine should preserve all flags too (with MOVS pc,lr or the like).

As an example, look at SCL_qsort. Each SWI is entered with r0 containing the SWI number (not very useful), r1 pointing to where the entry registers are stored, and r2 pointing to the private module word. The C function qsort() is defined as:

```
void qsort(void *base,size_t nmemb,size_t size, int (* compar) (const void *, const void *))
```

which, seeing as it has four parameters, translates into:

r0 -> base
r1 = number to sort
r2 = size of each element (always 4 here)
r3 -> comparison routine

If we have chosen to use a standard search, the appropriate address is calculated from compare_table. The comparison routine is called with r0 and r1 pointing to the two members to compare. It should return with r0=-1, 0 or 1 depending on the result of the comparison. Like the main SWI code, the comparison routines obey the rules regarding registers.

If more than four parameters need to be passed, use r4 and upwards but push the values onto the stack. SCL_bsearch needs to pass five parameters and shows how it is done.

Your routine should return with r0=0 if all went well. If not, r0 should point to a standard error block. Any

Figure 1

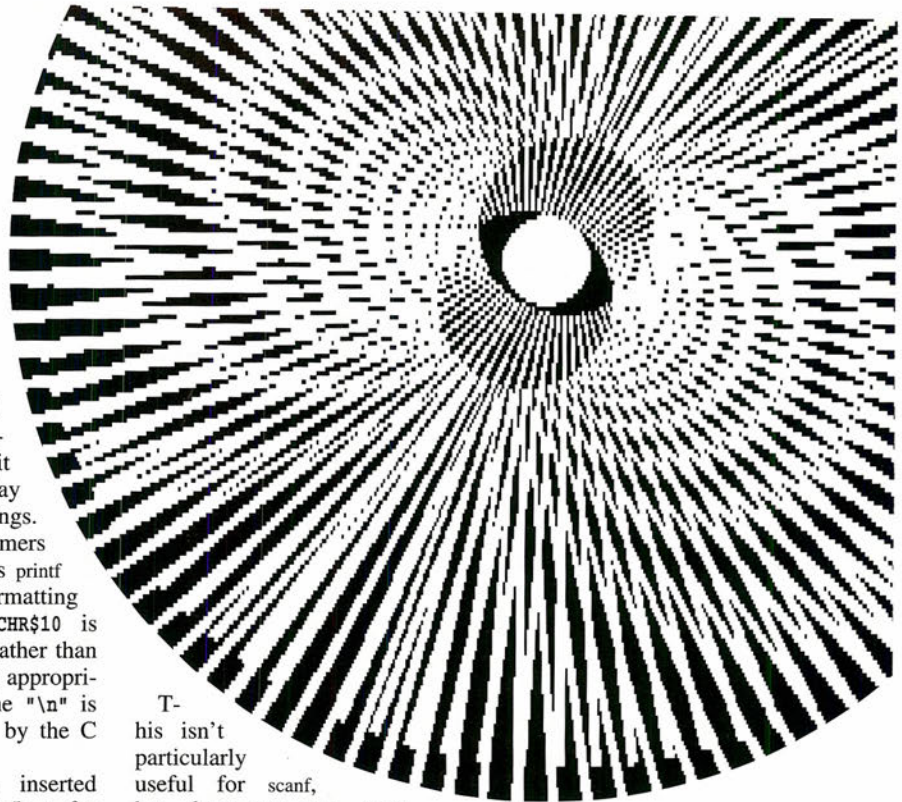
Valid printf conversion characters

Character	Meaning
%d	decimal integer
%o	octal integer
%x	hexadecimal integer
%u	unsigned decimal integer
%e	floating point number with exponent
%f	floating point number without exponent
%g	use the shorter of %e or %f
%c	single character
%s	string

Figure 2

Valid fopen flags

Flags	Meaning
r	open text file for input only
w	create text file for output
a	append – open text file for output, starting at current end
rb,wb,ab	as above, but file is 'binary' not text
r+,rb+	open file for update (read/write)
w+,wb+	create file for update (read/write)
a+,ab+	open/create file for update starting at current end



values that need to be returned should be stored over the entry values (remember, on entry, r1 points to these). SCL_bsearch returns a value using the `STR r0,[r9,#0]` instruction.

New calls

The latest version of *SCL* has six more *SWIxx* listings (04-09) and a new *SCL.Version*. Enter and save these in *SCL*, then CHAIN "SCLsrce" to reassemble the module.

Two of the most versatile functions the C language supplies are printf and scanf – the general purpose input and output calls. Those already familiar with C, can skip the following descriptions.

printf takes a control string, then zero or more parameters. The control string can contain plain text to be printed and special conversion characters, used to display numbers and strings. A simple example in C would be:

```
printf("%d plus %d equals %d\n",2,2,2+2);
```

which would print: '2 plus 2 equals 4'. The % symbol is used to prefix a conversion sequence and the common sequence %d means 'put a decimal number in here'. The parameters after the control string are substituted one by one into the output string. Figure 1 contains a full list of conversion characters.

The SWI call "SCL_printf" works in the same way, taking as the first parameter a control string of the above format, then up to seven more parameters as needed. For simplicity, floating point numbers aren't supported, but can be added without too much trouble if you need them. One important point is that C expects strings to be null-terminated (and they may contain newlines). So remember to add a `CHR$0` on the end, like this:

```
SYS "SCL_printf","Four squared is %d"+CHR$10+CHR$0,4^2
```

This call is useful to machine code programmers, since it simplifies the display of numbers and strings. Even Basic programmers may find it useful as printf supports various formatting options. Note that `CHR$10` is used for a newline, rather than `"\n"` which would be appropriate in C. In fact, the `"\n"` is converted to `CHR$10` by the C compiler.

If a number is inserted between the % and d (h, o, for instance) then the output value is right justified in a field of that width. For example, %5d right justifies in a field 5 characters wide. %-5d on the other hand will left justify in a field of 5. If you insert a 0 immediately after the % the padding will be done with zeros instead, so %03d might give '001' or '042'.

The opposite function to printf is scanf. This takes a control string and parameters in exactly the same way. The only difference is that the parameters are addresses of where the input values are to be stored. For example:

```
DIM v% 4
SYS "SCL_scanf","%d"+CHR$10+CHR$0,v%
PRINT !v%
```

would be equivalent to the traditional Basic line:

```
INPUT val% PRINT val%
```

Unlike Basic's INPUT command though, scanf can be instructed to skip bits of text in the input string. Extra white space is ignored and any text given in the control string, if matched, will be ignored too.

This isn't particularly useful for scanf, but there are two more functions – fprintf and fscanf – which behave exactly like printf and scanf but use a file for input and output.

fscanf may be a considerable code saver, since reading information from a file (for configuration purposes for example) can quickly take up a lot of code.

The SWI calls SCL_fprintf and SCL_vscanf are provided and these take an extra first parameter, a pointer to a file handle block. In C terms this parameter is of type (* FILE), but in real terms it is the address of a small descriptor set up by the C library when a file is opened.

So you can open and close a file for use with fscanf and fprintf, two more calls, fopen and fclose, are provided. They are used like this:

```
SYS "SCL_fopen","filename","flags" TO handle
SYS "SCL_flose",handle
```

The "flags" string describes how the file is to be opened and may be any of the valid sequences in Figure 2. To show how all of these calls may be used, the program *FileTest* creates a simple text file, writes some values and strings out, then reads them back in.

Its operation is very easy to follow, but it is worth making note of a couple of the features of scanf and fscanf.

First, you can see that the different conversion codes can be used in the same way as with printf in order to read different types of values from a file.

also note the use of the sequence call any$ which contains "%*[^\n]" (where \n means a newline character, Ascii code 10).

The * after a % means read this value but then discard it, so a number or string can be skipped. The square brackets can be used instead of %s for reading strings.

Characters are only accepted if they are included within the brackets or – if the set is preceded by ^ – only if they are not in that set.

In this example, the rest of the current line is skipped (in other words, keep reading characters as long as they aren't new lines).

For decoding parameters separated by commas, fscanf is very flexible.

Paint tip

An exceedingly useful quicky from Mike Williams:

'Have you ever noticed how difficult it is to trim the left and bottom edges of a sprite in Paint. The right and top edges are easy because you can use Adjust size. I used to struggle with Delete rows and Delete columns which are much trickier to use.

'Then I realised that it is much easier to perform a Horizontal and Vertical flip, then use Adjust size then flip back afterwards. It's obvious when you think of it, but saves a lot of fiddling about.'

Problems

Do you ever have that feeling that your machine is out to get you? Well, consider this: while developing a module containing a section of code that generated sound effects in the background under events and callbacks, my machine gave me the following error message: Error: SWI &40134 not known (Error Number &1EError: Internal error: abort on instruction fetch at &007C9204 (Error Number &80000001)

Spacing and missing close bracket are reproduced verbatim. Can anyone beat this... or indeed work out what it means?

VIBE THREE

Programs: Moire
Description: Graphics demos
Author: Jan Vibe
Machine: 32-bit

Moire is a short demonstration of the Moire fringes, produced when two sets of nearly parallel lines are brought together.

A sprite is simply created with line pattern on, then is repeatedly plotted at slightly-differing positions.

BREAKING UP

Program: DisInt
Description: Fade demo
Author: Mark Hobson
Machine: 32-bit

The 'fade' routine is a common feature of games and demos. This example is pretty, concise and quick.

Two machine-code routines are assembled – swop which swaps screen banks and change, which fades between banks.

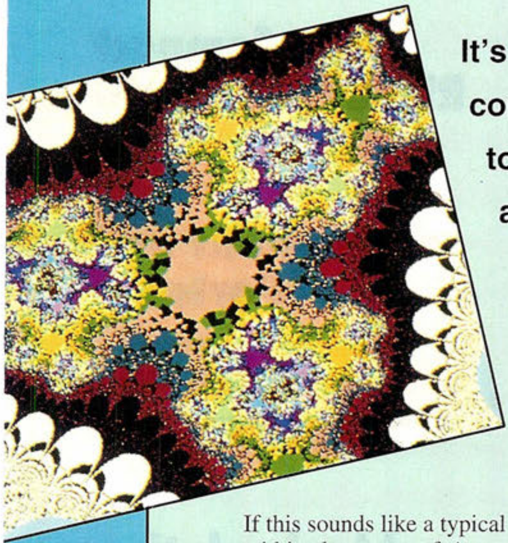
In detail

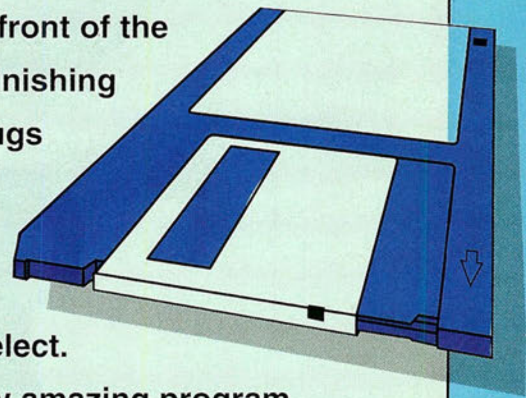
We thought Mark Hobson's *DisInt* was a good subject for an In Detail, not least because it features Basic and machine code and might therefore be educational to a variety of users.



60 - select Mode 15. We actually need two Mode 13 banks, so choosing Mode 15 is a concise way of clearing both screens in one go.
70 - switch the cursor off.
80 - switch the hourglass on.
90 - assemble the code.
100 - initialise a table used in the fade.
110 - hourglass off again.
120-130 - choose Mode 13 and switch that blasted cursor off again.
140 - set up a simple error handler – important since the error message may appear on the hidden screen bank.
150 - call the screen swap code; in this instance just so we can read the start address of one bank.
160-180 - store the start address, swap again and store the start address of bank 2.
190-230 - draw a pattern for one of our demo screens, including some random circles.
240-270 - add some text.
280 - fade our first screen on.
290-370 - create our second screen, this time with some rectangles.
380-410 - repeatedly fade between screens, waiting five seconds or until a key is pressed each time.
450 - the procedure to assemble the code.
460 - define the amount of memory needed for the machine-code.
470 - set the speed: this is the number of stages the fade will take and can be changed as you wish.
480 - dimension some space for the code.
490 - the main assembly loop; note that the OPT value goes from 8 to 10 (rather than the traditional 0 to 2). With bit 3 set, the variable L% is used as a limit on the assembly – if the program counter exceeds the dimensioned memory, a friendly error message (rather than Address exception, or a spurious No such variable) will be given.
500-520 - set up P% and L% and begin assembly.
530 - the fade routine: preserve link register.
540 - point R4 at our fade table. The screen is divided into sixteen portions – four across by four down. These are faded identically, although the fade is quick enough for you not to notice. For each pixel with a section there is a value in the table at R4 from 1 to speed which determines at which stage the pixel is faded from one screen to the other. This method ensures that no pixels are left unfaded at the end, and that the process is a steady one.
550 - R5 is the fade counter.
560 - the main loop, executed 'speed' times. R2 is the y counter, running from 63 to 0 (one quarter of the screen height).
570 - the y loop. R3 is the x counter, running from 79 to 0 (one quarter of the screen width).
580-610 - the x loop. The stage number for pixel R2, R3 is looked up in the table. If the pixel isn't to be faded this time, jump to skip.
620 - point R8 at the table offsets. This contains 16 offsets which are used to fade the 16 screen sections simultaneously.
630-680 - set up R0 and R1 to point to the addresses of the pixel being faded on the two screens.
690 - exit assembler temporarily.
700-710 - this next piece of code is assembled four times for speed of execution.
720 - read four offsets from the offset table into R9-R12.
730-750 - read the pixel at offset R9 from each screen then swap them over.
760-880 - repeat for offsets R10, R11 and R12.
890-900 - repeat four times.
910 - back to the assembler.
920-970 - decrement the various counters, looping back appropriately.
980 - exit.
1000-1010 - the base addresses of the two screen banks.
1030 - the offset table. FNarray is used to reserve memory.
1040 - the fade table.
1050 - the screen bank swapper.
1060-1080 - swap bank, store back.
1090-1120 - set bank for writing.
1130-1150 - set bank for display.
1160-1180 - read the screen start address and put at screen.
1210 - the current bank number.
1220-1230 our list of VDU variables to read, terminated with -1. 148=screen start.
1250-1260 - next pass.
1270-1310 - set up the offset table.
1380-1420 - PROCinit – randomises the fade table.
1440 - a text printing routine. a$ is to be displayed (in colour c% and tint t% with a black border) centrally at vertical position y%.
1450 - find x% so text is centred.
1460 - allow characters to be put at graphics cursor.
1470 - select black.
1480-1530 - display text in black nine times, with X and Y offsets of -4, 0 and 4 in all combinations. This is a neat way of adding a border to text.
1540-1560 - now display the text in the middle using the given colour.
1570 - separate graphics and text cursors again.
1580 - switch that darn cursor off again! (VDU 4 re-enables the cursor, rather annoyingly.)
1610+ - tidy up the screen and end.

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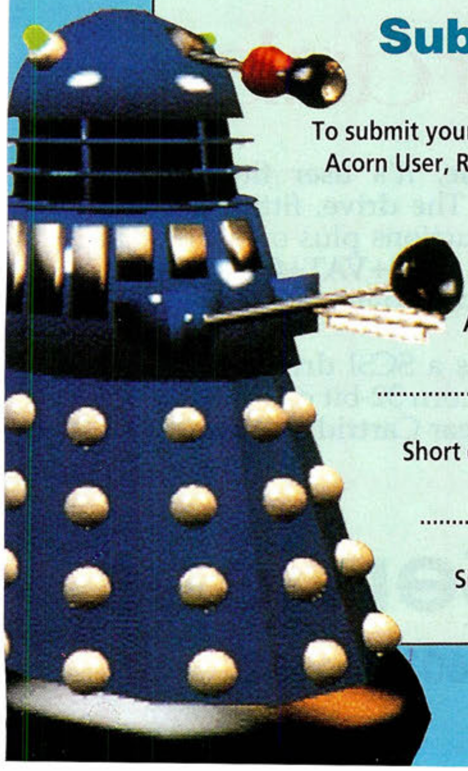
It's Friday night and you are stuck in front of the computer screen, putting the finishing touches to another masterpiece. Bugs are no longer crawling out of the code. The screen no longer does a glowing impression of Pollock everytime you press Select. You have just created an utterly amazing program.

If this sounds like a typical Friday night, then throw away that Littlewoods coupon, because fame and fortune await you within the pages of Acorn User. Every month on our disc we publish reader's programs, alongside those from the professionals.

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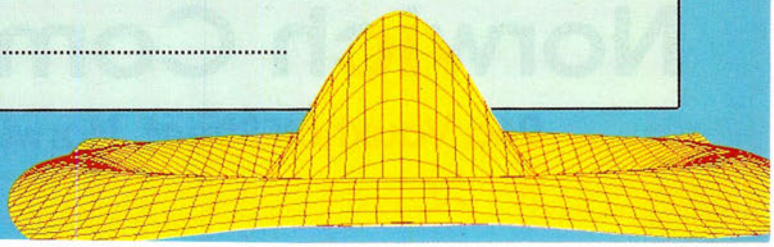
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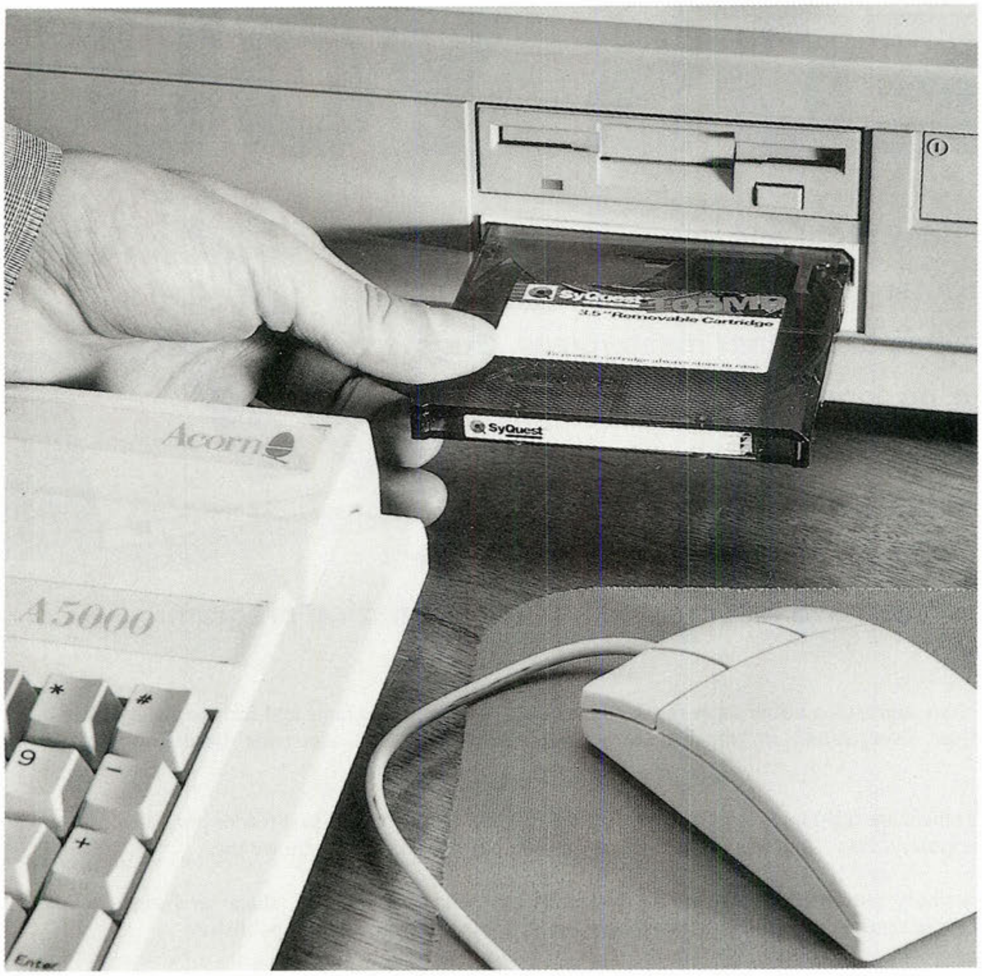
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Child's play

A kids' art package that doesn't mean sponging crayon off the wallpaper. Adults find it addictive too, as Pete Worrall finds out

Roll up, roll up for the thrills, spills and fun of the fair all crammed into ESM's art package *Kidpix*. Wacky pencils, moving snakes, special effects accompanied with innovative and crazy sounds make this one of the most experimental – and noisiest – experiences on the Arc for a long time.

For your money, an extremely reasonable £35 + VAT inclusive of site licence, you receive a program disc and an extras disc plus the excellent *Teachers and Menu Guide* in ring-binder format with a chapter on curriculum projects including Totem Poles, Picture Poems and Theme Quilts. *Kidpix* is aimed at children aged from four to 11 plus a good proportion of adults too.

Once you have installed the program onto the iconbar selecting on the 'smiling diamond face' takes you into the Artroom where everything is clearly labelled: the twelve tools are on the top left and the colour palette underneath. At the bottom of the screen are the 150 basic tool options, loads of rubber stamps resembling pictograms, and text options. The large clear Pencil, Brush, and Eraser tools are self-explanatory; others such as the Moving Van and Electric Mixer encourage that 'let's try it out' spirit of adventure. Most of the features are soundtracked, such as the talking alphabet; some are animated, like the fractal trees with their delightful tinkling sounds. In many respects this could be an early learner's first multimedia experience.



Art has never been so easy and everything is configurable, so you can even add (and switch off) your own sound effects using Clares' Armadeus Sound Sampler or Oak Solutions' Oak Recorder. 'Small Kids Mode' eliminates the problem of small fingers accidentally opening a menu.

An excellent Stamp Editor, which resembles graph paper lets you edit the rubber stamp pictures or even create personalised stamps patterns, great for textile design. Saving your masterpieces is easy through a special Kidpix Area: simply type in a name and select OK.

Kidpix contains many advanced features such as Cut and Paste, Edge Detection, transparent effects and a range of flood-fills all designed for ease of use. In the classroom it lends itself to short sessions where time is at a premium and little adult supervision is required.

The manic picture of a typical *Kidpix* user only took 20 minutes using the symmetry tool for the face, rubber stamps for the hair and flood-fills. ESM is planning further additions to *Kidpix* including 'theme packs' and a *Kidpix* Companion Disc. I'm hooked; this art package is an experience.

Ten top features

There are so many features that it is impossible to describe them all but here are my current top ten favourites.

1 Drippy Paint. Realistic clean-dripping paintbrush for that Jackson Pollock effect with ploppy sounds.

2 Kaleidoscope. Automatic symmetry drawing; an excellent conceptual tool with alien hum.

3 Magnifying Glass. Enlarges and prints areas of screen.

4 Alphabet Line. Type in a line of text and paint in all directions with it.

5 Venetian Blinds. This slices your drawing into moving horizontal stripes using a Blues Brothers face while making silly sounds.

6 Firecracker. A stick of dynamite blows up the screen with concentric circles; then Bang! It's gone.

7 Undo option with face shouting in desperation: 'Oh No!'

8 Geometry. Produces random geometric drawings a bit like Spirograph pictures, along with a strange whistle.

9 Caterpillars. Symmetrical caterpillars follow you around the screen making patterns.

10 Dot-to-Dot. Create your own fun mystery pictures for the school magazine competition; when complete, the line connecting the numbered dots disappears.

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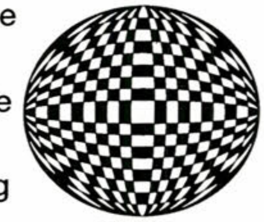
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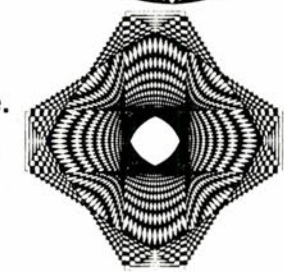
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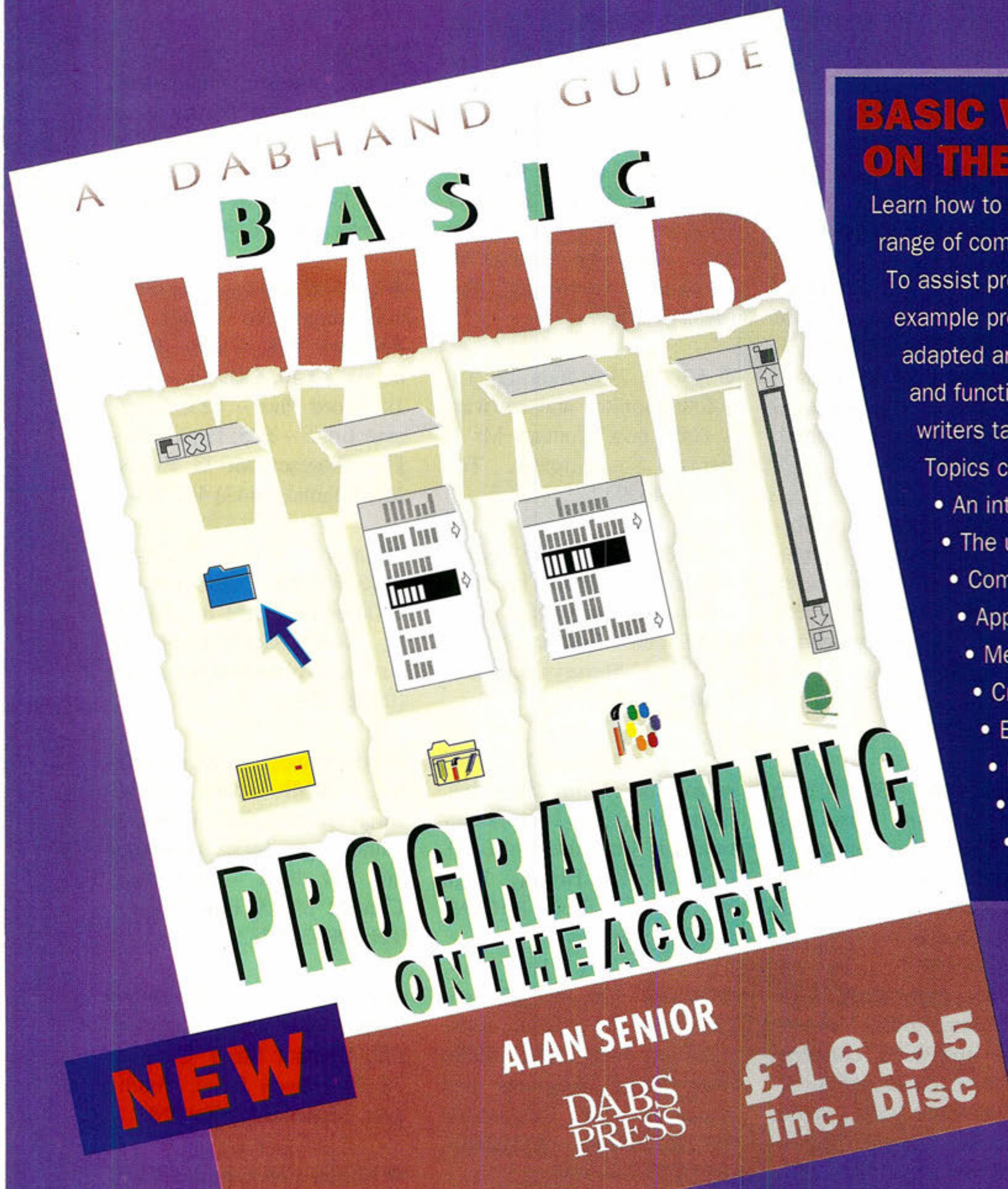
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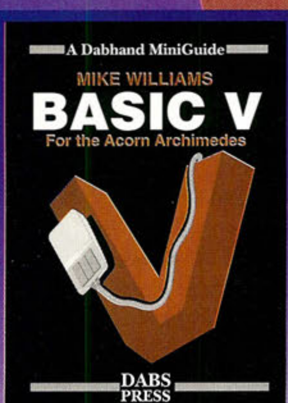
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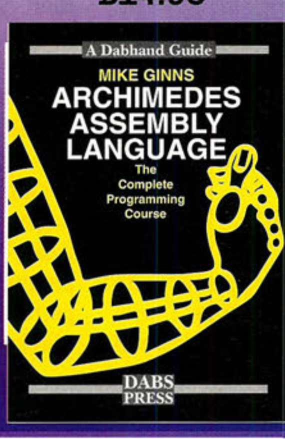
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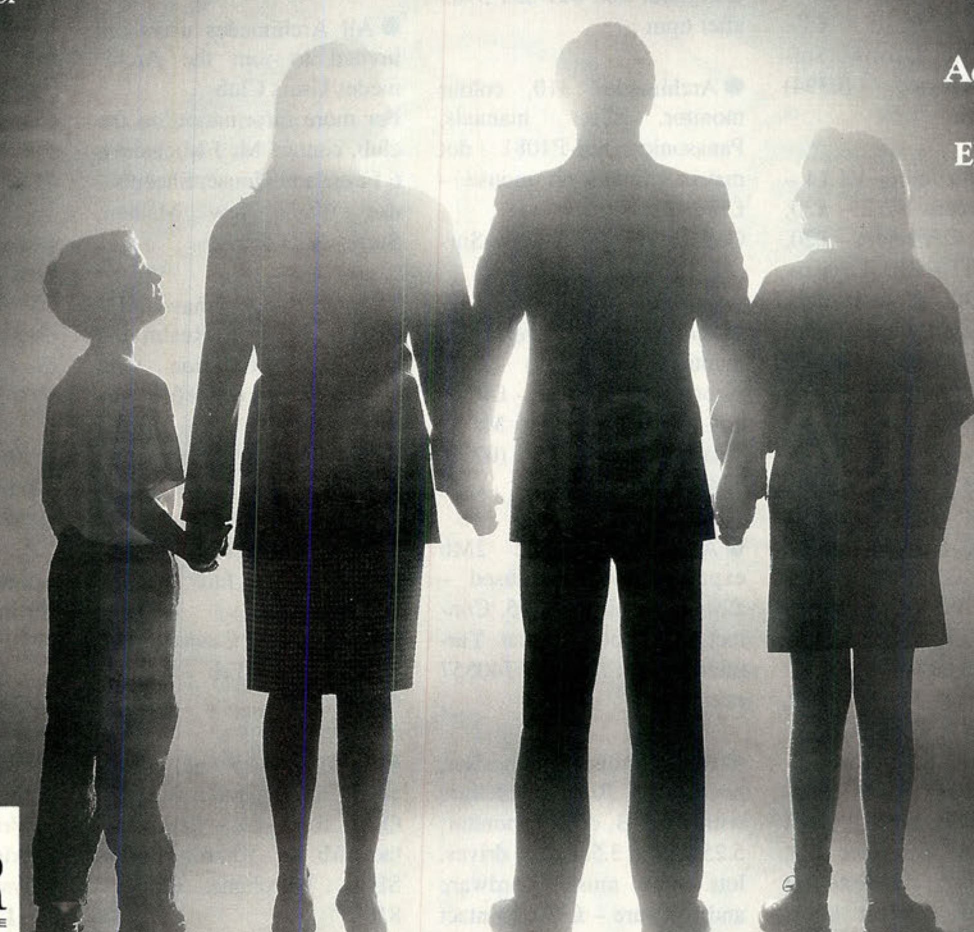
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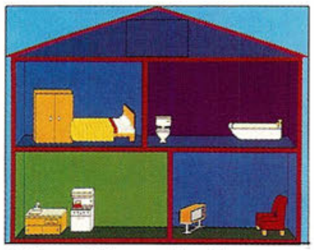
With a name like Brilliant, you give your software a lot to live up to. Alice Smith takes a run through some of the best, and some of the rest special needs computing

If you call your company Brilliant Computing, you set high expectations for your products. Judging by the batch of programs which arrived in the *Acorn User* office recently, I'm not entirely sure Brilliant's special needs software lives up to the dictionary definition. However, its output is certainly solid and sound.

Starting with *Touch Fun Fair*, this program was originally produced for the BBC range of computers; it has to be said that this shows.

The Switch On concept was also developed for the Beeb and, although *Switch On Zoo* is a new, Arc-only title, it still has a very old-fashioned feel.

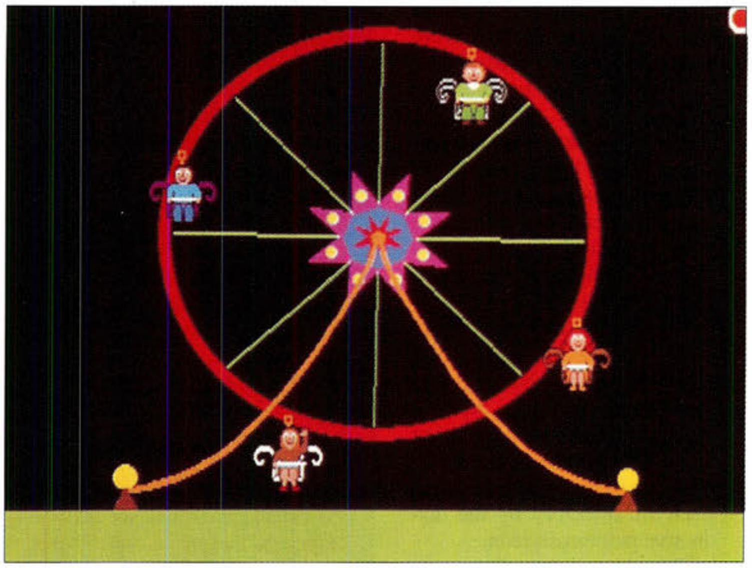
Both discs contain a collection of games. In *Touch Fun Fair* they are based on popular fairground rides such as the Ghost Train, Hoopla and the Ferris Wheel. *Switch On Zoo*,



At home Microworlds style

on the other hand, features creatures such as an elephant, a frog and penguins, in picture-building and matching activities.

Sound effects are included (these are slow to load, for which Brilliant rather sweetly apologises on screen) but both these packages have the real advantage that they can be operated via switches, a touch screen or a Concept Keyboard. The graphics are extremely basic but in the hands of special needs teachers, these programs could be very stimulating and they do have the merit of being inexpensive.

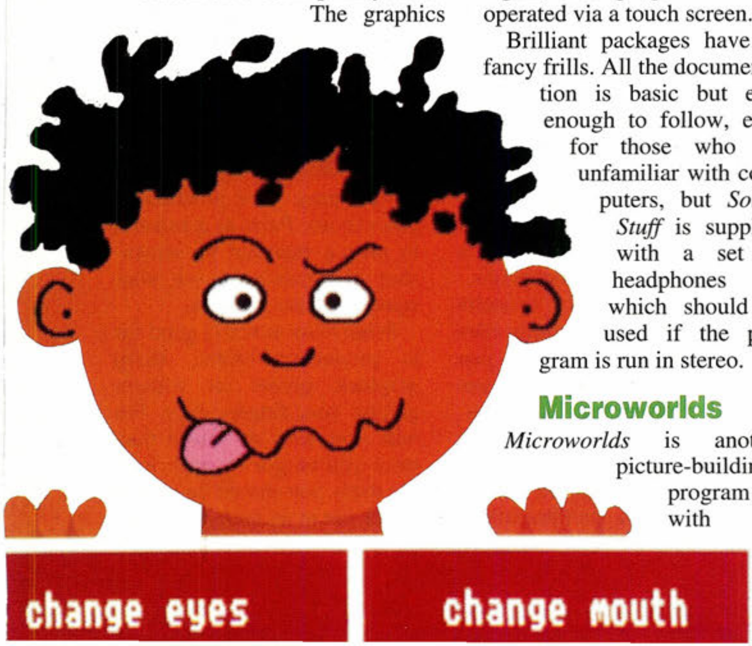


All the fun of the fair. Well, you do have to use a bit of imagination

Sound stuff

Although it comes on two discs rather than one, *Sound Stuff* is in a similar vein. It consists of a library of 24 animated pictures and the noises associated with them. These are things like a fire engine, a vacuum cleaner and a dog, and five different activities are built around them. One, for example, is a *Pelmanism*-type game and for finding a matching pair the user gets a simple reward. Again, this program can be operated via a touch screen.

Brilliant packages have no fancy frills. All the documentation is basic but easy enough to follow, even for those who are unfamiliar with computers, but *Sound Stuff* is supplied with a set of headphones which should be used if the program is run in stereo.



Microworlds

Microworlds is another picture-building program with recorded speech, this time based around the environments of home and garden. In a sense, none of these programs is particularly striking in itself, their value lies in the way teachers can use them as starting points for learning.

In common with the other packages looked at here, *Microworlds* runs perpetually, so the computer can be used as a 'free play' resource for users to go to whenever they want.

Smart Alex

Of all the programs featured here, I like *Smart Alex* best, probably because it has a character – Alex or Alix depending on your gender preference.

It has proved very popular in field special needs education. Alex/Alix pulls faces, laughs, winks, waves and barks.

This program has a great deal of 'content', would interest a fairly wide age and ability range and, if you are sampling Brilliant Computing's wares for the first time, is the one you should buy.

Product details

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John Rennie sets sail on the uncharted waters of Paint and shows himself to be the buoy for the job

LEARNING CURVE

Last month I made a start on tickling your artistic tastebuds with a smorgasbord of tasty images compiled in Draw. Leaving aside the comments of philistines who felt my attempts at drawing were more of a dog's dinner than a banquet, we start on the next course.

Now you have had time to digest these basic lessons in draughtsmanship, and know the sharp end of the pencil from the rubber, we take a look at the application concerned with all things spritely: *Paint*.

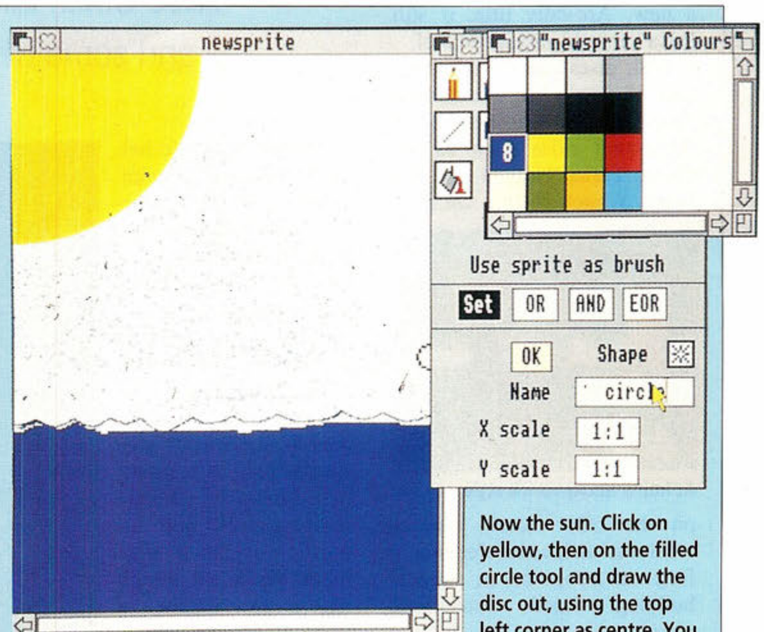
You can use this pixel-based picture editor to, yes, paint coloured images by applying colours to an area with a variety of brushes and other tools. The resultant picture is called a sprite, represented in your file directory by the distinctive paintbrush icon.

The important distinction between *Draw* and *Paint* is that the former is object-based, so you can pick up and move the assorted lines, polygons and Bezier curves that make up your image. *Paint*, being colour-based, only recognises the colour of each pixel. You can't move pixels about the screen, therefore you can't pick up, delete or resize a shape constructed from pixels.

Paint is very versatile though. Sprites and sprite files use a standard format, so you can export the images you use to other programs, like *Draw*; you can import other sprites into your sprite files; you can merge sprites together and – and this is how the illustrations on this page were produced – you can use *Paint* as a camera, to take a snapshot or screenshot of whatever is on your screen. A tasty package.

What Paint is really good for is producing bright, sharp graphics, poster art without getting your fingers dirty. We will start with an image that, once you've got to grips with the tools, you should be able to knock out in an hour or less.

Step 1

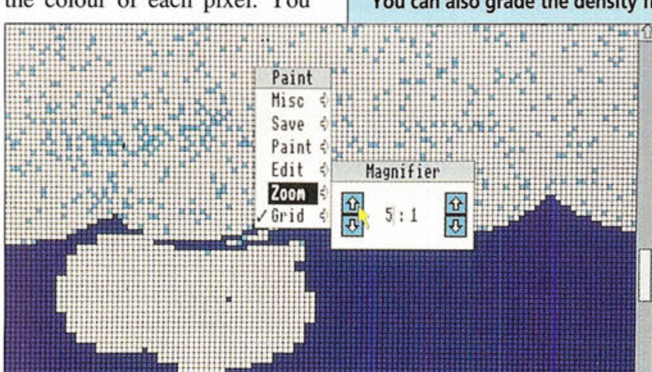


Create a sprite. Click in your Apps file, double-click on your *Paint* icon and it appears on your iconbar. Click once on this to open a *Paint* file. The Palette iconbar menu allows you to set the screenmode, and hence the colours available to you. You can go for the full 256-colours, but for this tutorial I have selected Mode 27: 16 colours are plenty for our purposes. Click on the *Paint* icon; this raises the Create new sprite window with a Sprite file window behind. Name your sprite by replacing newsprite with Poster and set the desired size. We are creating a poster, so go for a portrait layout rather than the landscape shape in the default. Click OK and here is your sprite.

Clicking within the Edit submenu of the main menu allows you to bring up the Paint Tools. Combining these two allows you to create your picture. Click on the Airbrush tool – top second left in your box, and click on light blue in the Colour palette. Now fill the whole ground with the spray, you can set Density and Radius of spray to taste. You can also grade the density from top lightest to bottom darkest by respraying as you move down.

Now the sun. Click on yellow, then on the filled circle tool and draw the disc out, using the top left corner as centre. You will notice this obscures the blue of the sky beneath. Sea? Zoom up for the this one. 7 to 1 should do it. Now you see the pixels.

Select the Pencil tool and Dark Blue and sketch in the irregular wave shapes as a continuous line from page left to page right. Now we have to fill in the block. This is fun and yields the same aesthetic pleasure as graffiti-ing, without the hassle and risk of sneaking into London Underground engine sheds at dead of night. Select Paintbrush: yes, it's the one that looks like a paintbrush, and smooth in the colour. For the bits you can't reach, simply reduce the size of the brushstrokes using the x and y settings. The very fine stuff you can colour pixel-by-pixel.

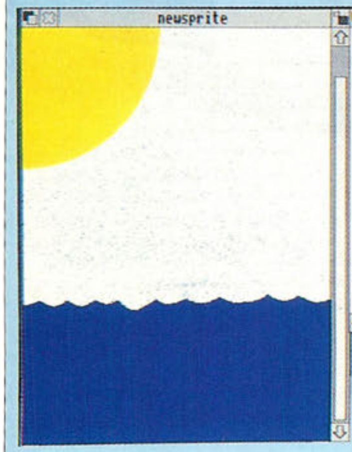


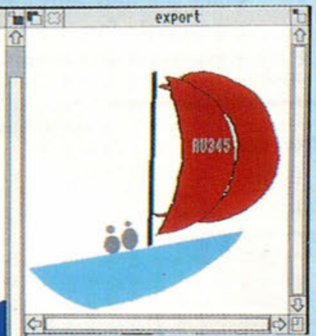
Pixels are the basic elements of your screen. Here the screen is blown up to 5:1 magnification. Each square in the grid is a pixel. Big it looks blocky, but reduced down these chunky gradations blend into smooth curves



Step 2

Now you have your smoothly-lapping waves you want something to sail on them. Create another sprite, called Boat: size is immaterial as you are going to cut and paste from Sprite 2 into Sprite 1. The essence of poster art is combining simple polygons and colours to produce a recognisable image. So, your boat comprises a filled circle segment for the hull; a filled rectangle for the mast; circle outline sections and Set/clear pixels (pencil tool) for the sails and filled ellipses and filled circles for your crew. Manipulating these tools is fiddly at first, hence the reason for boat-building in a separate sprite, but if you make a mistake, click over the selected tool icon and the work will be undone.

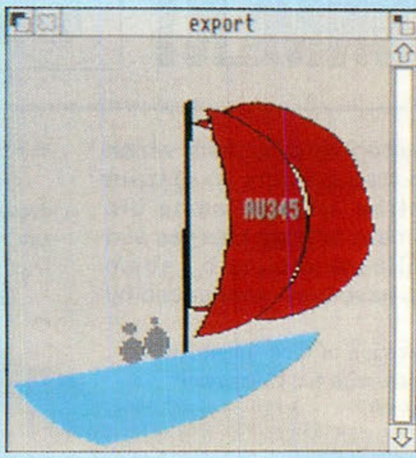


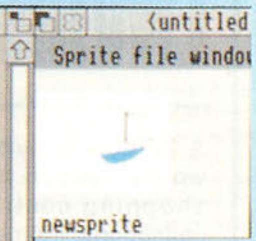


Select the Copy block (camera) tool, and draw a rectangle out over the boat in Boat. Click to select it.

Step 3

Now to cut the boat out. Moving over the main menu select Mask. Then scroll full down on the colour palette and select the lined grey option. Click back in the white background of the Boat sprite – the bit you haven't copied – and this will be masked out in grey. Then select Paintbrush as sprite. Change 'Circle' to 'Boat'. Set to Global. You then move your paintbrush over to the Poster sprite. You will see the boat image moving around the screen, transparent, as you move your cursor. Position it as desired and click. The boat is placed. Now obviously the base of the hull should be hidden by the waves, this is the disadvantage of placing the boat afterwards. Touch this up, as before with the Pencil tool and fill with Paintbrush.



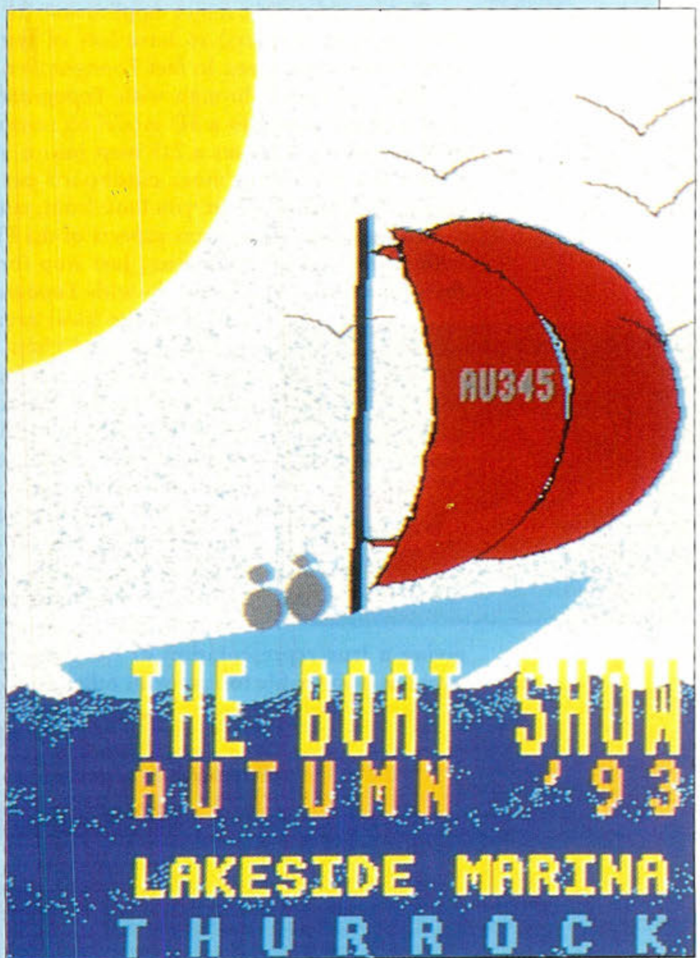


Step 4

The poster is almost there, now for the finishing touches. Text is created using the 'T' tool. Type into the Text window the words you require, adjust their vertical and horizontal size with the x and y co-ordinates and set the spacing between letters. Move your cursor to the sail, click, and the text appears.



The main text, with its varying sizes and spacings, needs to be created in a separate sprite file, then cut and applied using the sprite as paintbrush tool as we did with the boat cutout. Using a variety of colours and running from sky into sea is very striking, but ensure you are not putting dark blue on blue, for instance, as your carefully-wrought words will disappear. For the final touches, blow up the sprite to 5:1 and create the wave peaks using a white airbrush. Your friendly seagulls are created with a swift tick of the Pencil tool, set to black.



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BY MATTHEW DAVIES

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The children even went as far as to propose a new route for the road to the town planners. The proposed route would have a negligible impact on the area but still provide the much needed relief to existing roads.



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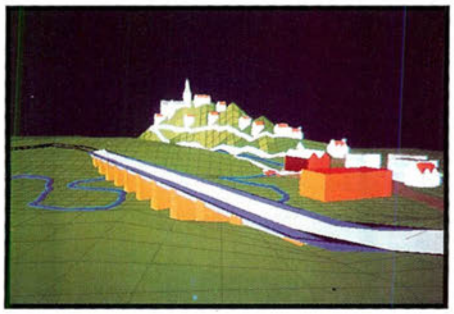
Th...

Topographer is a major application for the Geography curriculum which allows children (and teachers) to have lots of fun whilst learning all about maps, contour lines, valleys, rivers etc. In fact *Topographer* covers virtually all items found on a map.

The real break through with *Topographer* is its 3D section which allows you to convert a 2D map into a 3D model on screen. Imagine turning a set of flat contour lines on a 2D map into a 3D model which clearly shows the hill — no more cardboard cut out models or papier mache! You define where you look from, and what you look at.



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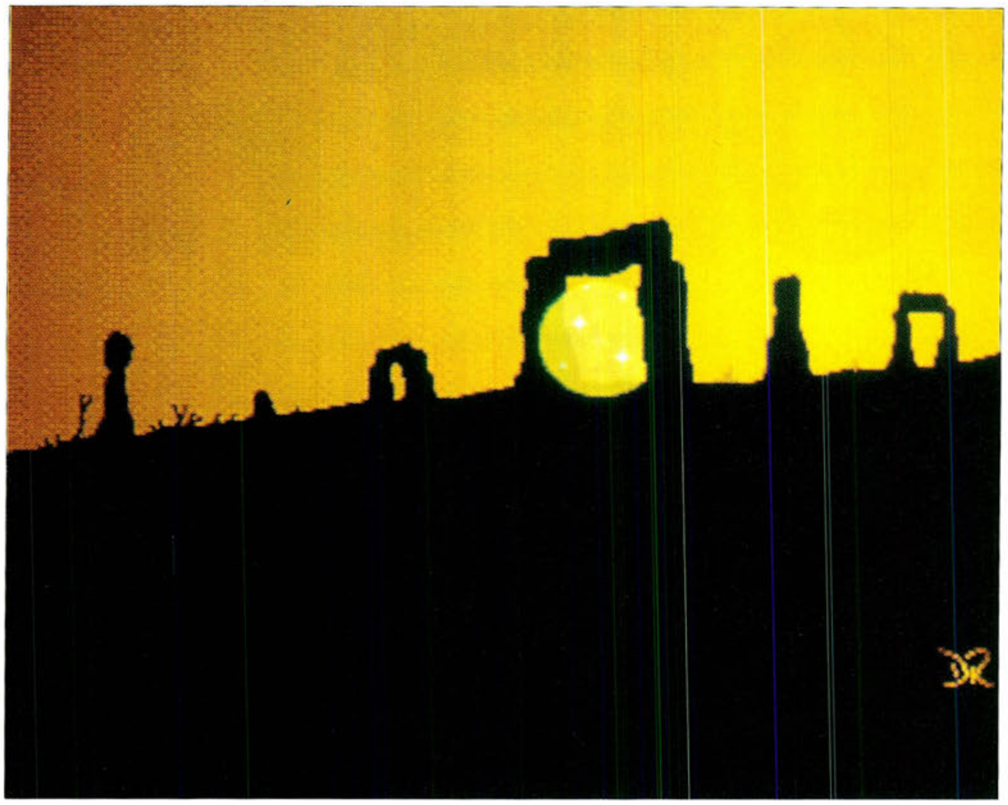
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As CIS' graphics package makes its debut on the Arc, Jack Kreindler finds it quick, powerful, but unhappily-married to Mode 13

Survival of the quickest

QPaint or *QuickPaint* to give it its full name, was originally designed as a sprite generator for the games writers at CIS. But though traits of the programmers' original intentions remain, the package has developed into far more than just an Amiga *Deluxe Paint* replacement.

In use

The directory window of our pre-release version contained a configuring program. A complete toolset appears next to the last one saved and the user can choose the tools that appear in *QPaint* itself. So, although the program takes up a hefty 736K of Ram, the loaded version is just 143K.

One noticeable aspect of *QPaint*'s front end is that it is not multi-tasking. Once a sprite is loaded, it will immediately exit the desktop to Mode 13. Only 256-colour sprites can be imported, so editing icons first requires translation in *ChangeFSI* or suchlike. Non-Mode 13 sprites can be stretched or squashed to size, but locking the aspect ratio is not yet possible.

A striking feature of the program is the number of special effects tools available. These include Shear, Rotate, Perspectivise and Mould for shaping, and a good array of colour and image manipulation such as Smooth, Lighten, Tint, Blur and Sharpen.

A colour table screen offers *Revelation Image Pro*-like tone and colour-shifting facilities. Of the raw creative tools the gradated fills were most impressive. At the base of the *QPaint* screen is an area dedicated to the colours involved in graduated fills. Select any colours from the 256-colour set and an option blends the in-between colours, using dithering. This enables graduated fills to travel through more than one colour range in a single fill, something *ArtWorks* users would find very useful.

Another feature for image creation can be found in the Perspective Options menu, from which grids put into perspective, pixels and chequered surfaces can be formed. The number of image enhancement tools, under the control of the three-level magnification window, help to refine and add the finishing touches.

As far as speed goes, *QuickPaint* lives up to its name, but being a single-tasking application, this is to be expected. Striking imagery, especially once the effects have been mastered, can be whipped up in no time. But the serious drawback with *QPaint* is its marriage to Mode 13.

Conclusion

The price is to be £49.95 with *Photopia Junior* thrown in: a good price for this application. And CIS promises, if not a multi-mode version, at least Mode 28 compatibility at some time in the future. Other features promised are an animation suite and memory-dependent undo buffer.

But for the first release, *QPaint* is in a narrow market niche. For producing games screens, *QuickPaint* is going to beat everything, but for fine artwork at high resolutions the plethora of tools and effects cannot fulfil their potential, for the moment at least.

CIS is on 071–278 5136

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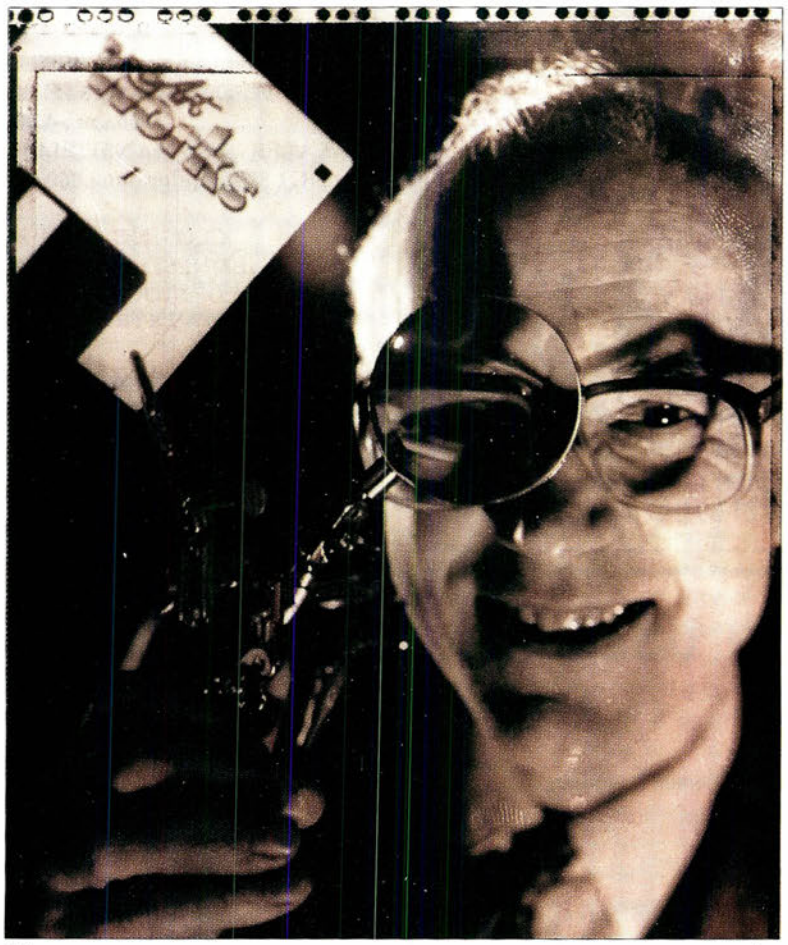
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THE MOXON INTERVIEW

GORDON TAYLOR

This scenario is not normal. I'm sitting in a snooker room, complete with full-size snooker table, mounted moose head on the wall (at least, I think it's a moose head) and racks of cues. And the telephone has just started to talk. I kid you not.

The telephone is calmly asking Gordon Taylor, marketing manager for Computer Concepts, to pick up the receiver. This is Gaddesden Place, home of the talking telephone system and the company that brought you *Impression* and *Artworks.*



ROBERT CLIFFORD

Upstairs there's a band recording a video for their new single, and when I venture to the first floor in search of the owner of the black BMW which is so thoughtfully parked right in front of my car, the fake smoke and wacky costumes don't quite gel with my image of Computer Concepts as a quality software and hardware company. Getting back down to earth, CC is gearing up to the Acorn World show with plenty of new releases, a professional version of *Impression*, two CD-Rom versions of *Artworks*, more printers, a multimedia expansion card *and* a thesaurus: busy time, then, is it?

‘ The Acorn platform is the only credible non-American platform ’

'We won't be branching out into new product areas,' explains Gordon. 'but there'll be more consolidation in areas we already cover.' So I suppose that means there won't be any hard-hitting games from the Hemel Hempstead stables this Christmas.

'Er, no, I don't think so: it wouldn't really fit in with our image,' says Gordon. 'On the other hand, I welcome the change to a games-oriented Acorn market: I think Acorn's current business stance is just right. There's a lot of money in the games end of the market, and they're after it.'

Do I detect a small streak of optimism there? It seems to me that whenever I go to Acorn shows (and, by the way, Gordon always makes an appearance at Acorn shows: bit of a famous show personality is our Gordon) there are always plenty of people moaning about Acorn's business plans. What a relief, then, to hear phrases like: 'The Acorn platform is the only credible non-American platform,' and 'I believe that without Acorn there wouldn't be an independent hardware or software market in the UK.'

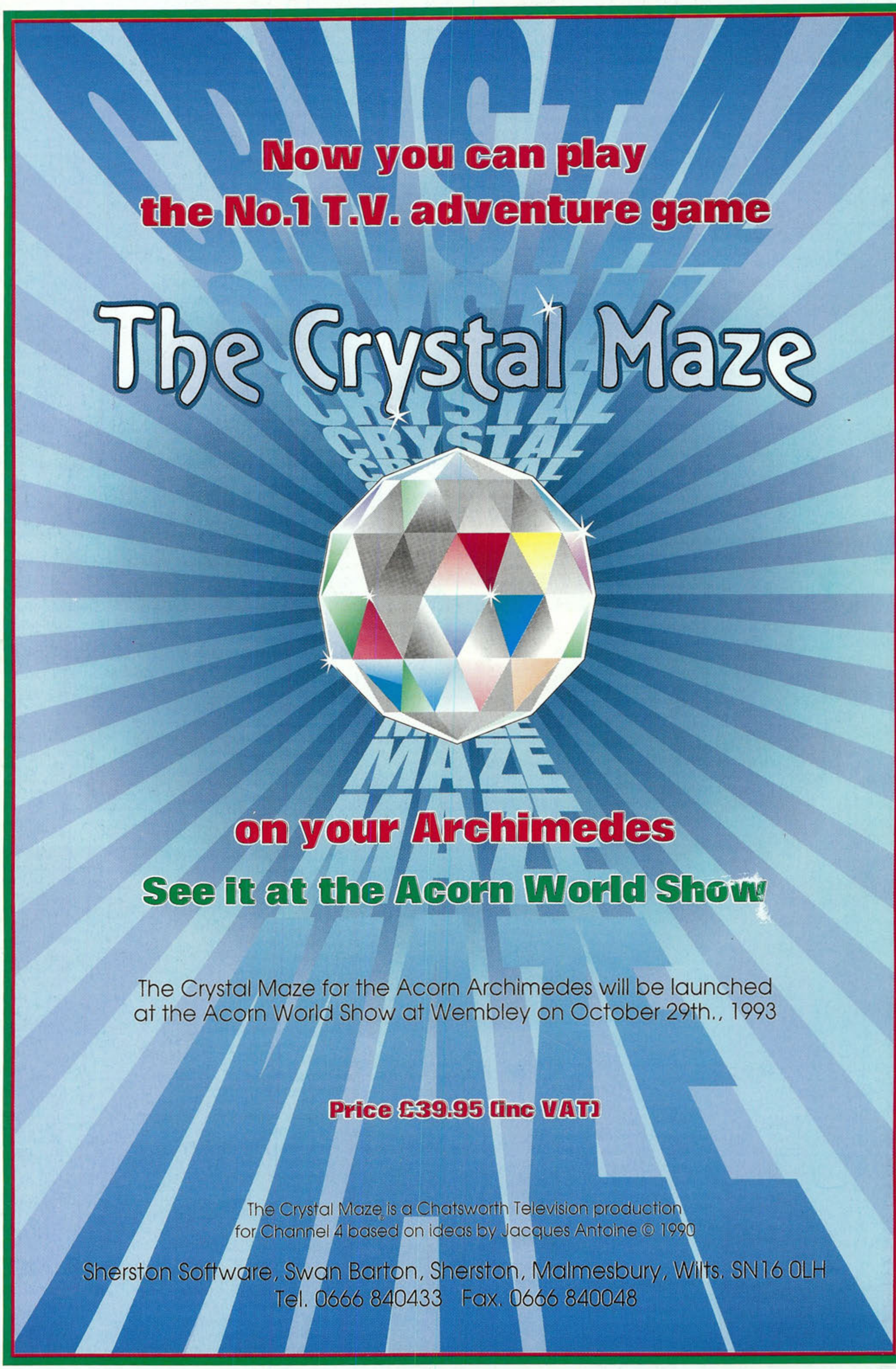
Gordon's assessment of the competition goes something like this... 'I happen to think that Atari and Commodore haven't managed the change from 16-bit to 32-bit at all well: the vast majority of their customers still use 16-bit technology and do not necessarily want to upgrade.' No-one's safe from Gordon's rose-coloured spectacles: not even Sonic and Mario. 'In the case of Nintendo and Sega, they sell both the hardware and most of the software,' Gordon points out, 'so they price their machines very low, and push a lot more of the cost onto games prices, which are a lot higher than they need be. This doesn't happen in the Acorn world, as Acorn itself sells very little software compared to the third-party market.' So Acorn games are cheaper, but then again there aren't so many of them, and it takes some time for games to migrate to the 32-bit hardware. Still, one big advantage of the Acorn software scene is that, as Steve Jobs, father of the Apple put it: 'Software is always written for the lowest common denominator,' and with Acorn that standard is 32-bit, and not 16-bit.

Is this why Gordon loves Acorn computers so much? Because the technology involved is state of the art? Or is there more to it?

'All other computer platforms are controlled from America, so the profit goes there,' says Gordon. 'Software is written to cater for American needs, as opposed to the rest of the world, and the American domination of computing is akin to their domination in the film industry.

'Unless we support a machine from this country (Acorn machines, in other words) then that option will waste away.'

So there we have it: your country needs you. Gordon Taylor is a useful persuader to have on your team. Another feather in CC's cap.


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